

Sales Executives

London based c.£12K on quota plus car One of the leading computer manufacturers is continuing to expand its sales force and is therefore looking for several sales executives to join a highly

Applicants must have e proven sales record in the sales of minis or medium range computers, or have extensive experience in the services industry. These are excellent opportunities for above average earnings in o professional

Contact: Jim Baker

**COBOL Programmers** 

up to £6,000

Our client, e leading software house, has immediate vacancies for progremmers to work on the development of e variety of systems. Cacdidates must have two years experience of COBOL in e commercial eavironment, preferebly on a mainframe such ea IBM, ICL, Honeywell, etc. Knowledge of real-time, communications or database applications would be

The Company have an extensive growth plan end are willing to provida e training programme on new machines.

Attractive salaries and benefits with opportunities to travel. Contact: Jim Bakar

**Technical Advisers Projects Managers** 

Herts
£4,000£6,000+car allowance
Excellent opportunities have arisen with a small business systema
msnufacturer for experienced softwere/commercial support persons to
provide liaison and technical aid to a wide ranging customer base. Cendidates
will have e sound and varied commercial programming and systems analysis background, coupled with proven man-management and post sales experience. Since the key function is client liaison appointees will be personable individulas with the ability to communicate effectively with

A substantial starting salary will be paid to ottract high calibre people. Contact: Margaret Stevens Manager Commercial Applications Group

London

A well established computer bureau has a requirement for a d.p. professional to head up the commercial applications team. The auccessful candidate will have a broad beckground in systems analysis, programming and project control, together with experience of man-management. The Company offer an excellent computing service based on two large systems supplying integrated timesharing and remote batch services throughout the U.K. COBOL/FORTRAN are the main languages used, while the work content is mostly to analyse customer requirements and to identify solutions. mostly to snalyse customer requirements and to identify solutions. Excellent salary oud fringe benefits include a bonus and a profit sharing

Contact: Margaret Slevens

#### Australia

Offers a new etart and good income for computer professionale either planning to emigrats or to work there for a year or two. It's worth considering and we can help you make the decision. In conjuction with our Australian associates we provide in the early stages

we look at your past experience; inform you objectively of your career prospects;

salary expectations;

the type of position you could fit into.

In addition we advise on the following:

aspects of getting there; shipping of personal effects;

transference of funds; information on atandards of living (costs, atc.)

We will easist on arrival, settling in and getting initial accommodation Wadon't necessorily line you up with a job before you get there—we offer o choice of prospects from which you can choose. It's a new, unique service and if you are seriously contemplating Australia give us o ring and have o chot

Contact: Mika Creamer

For further information on any of the above vacancies please contact the appropriate consultant. If your qualifications do not mstch the above positions but you are seeking other opportunities please contact us anyway.

JAMES BAKER ASSOCIATES International Personnel Consultants 16 Maddox Street, London W.1. Tel: 01-491 4478

## Assembler Programmers To £6,000 Watford Area

These are rather special opportunities for rather special people – people who wish to take an immediate step forward in ealary and responsibility, people who seek the flexibility to shape and progress their own careers with a successful and rapidly expanding company.

The posts offer: Fast (we mean fast) promotion on merit.

Technically demanding work.

The opportunity to meet clients in the U.K. and Europe.

A pleasant, unconventional environment.

An interesting and valuable benefits package.

Experience? - Well, system programming on a Nova or similar machine operating under RDOS would certainly be a big plus.

Technomark, King House, 8/11 Westbourne Grove, London, W2 4UA

STATIONERY & BUSINESS FORMS

for HIGH QUALITY
COMPETITIVE PRICES
QUICK DELIVERY
plus FIRST CLASS SERVICE formdeeign

simulators for the new General Dynamics F-10 fighter, which

will be used to train pilots to fly 1,000 of the USAF's total

cumplement of 3,000 F16s.

Simulators ere likely to be

raquired for the other 2,000

machines, leaving the winner of

the current contract well placed for further business.

DG European

sales chief

COMPUTER WEEKLY

15 CROSS STREET

MANCHESTER M2 1WF ENGLAND TEL: 081-832 8987

### Moral dilemma over Interpol's moves for own system

ACCORDING to raliabla sourcea, inquiriea by the National Com-Interpol, the international police mission on Law Enforcement organisation, is working towards and Social Justica (NCLE), which tha astablishment of a computer hes offices in Washington, Los cantra at its St Cloud haadquar-tara, outsida Paris.

Angalas and 18 other US citias.

NCLE itself ia an unusual

Evan though Interpol does not now have its own computers, it does heve access to the computerised information systama of the US govarnment. Interpol is balieved to have similer access to the automated govarnment racorda ol Garmacriminal racords via the compu-larised National Crime ny, Franca, the UK, the Netherlands and thosa ol many other Information Centre (NCIC).

Interpol's access to these recorda and tha possibility of autometad access in the near future raisa serious quaations for govarnments around the globe. Should they buy computers for Interpol?

In recant months, Interpol has come under scrutiny by various governments, including those of tha US, West Garmany, tha UK, tha Natherlands and, it is baliavad, Canade.

In addition, the organisation has become the object of to support their requests." The

Interpol could not be specifically accused of acting in waye that public intarast group as it ia wera diflarant from its claims, sponsorad by the controversial .''thara ia no practical way to assura (its) complianca' with Church of Sciantology A report prapered last Da-Accounting Offica (GAO) stated

Whan an NCLE invastigator, Vaughan Young, travellod that Intarpol had accass to was falsely eccused of countarfaiting his copy of the GAO raport - and of imparsonating a operated by the Federel Bureeu US government official.

Young claims to have accurately identified himsell, and ha of Investigation and a similer system operated by the US aven appeared at interpol offices Treasury Depertment. addition, eccording to in en attampt to claar up tha GAO, Interpol can obtain such

Tha GAO raport he was itams as local police Information and avan copies of US citizana accusad of fabricating is raadily availab]a to anyona who is Whila the GAO report did not specifically accusa Interpol of abusing its privilages, it did steta that in its limited study it

Interpol sent his name and its accusolions to the various Internal burgaux around the datarminad that "requestors (ol world, and e darisive story ebout information! often did not Young was planted in the Wast lurnish adaquate documentation German Press.

# ALL Data Generel's area mana-

act Data Generel's area managers in Europe now report to Ray Fortune, who hes been appointed to the newly-creeted post of seles director, Europe.

Until now Fortune has been based in London as area menager for North West Europe. His new job takes him to Date General's European headquarters in Parls.

ters in Paris. Ray Piggot, formerly UK national sales manager, has succeeded Fortune es area manager North West Europe. In this position has been according to the control of the control this position he has responsibil-

n the UK, Belglum and the TP monitor launch

ity for Data General's activitiea

TRANSACTION processing has moved on to enother line of small machines, with the announcement by interdeta of the Itrac TP monitor for its 32bit minicomputers. The product was developed by Interdeta's European softwere group based

Third world urged to limit imports

Nords in bid for

**US simulators** 

secret, but tha two UK-based

simuletor builders, Redifon and

Link-Miles, were ruled out on

security grounds, which confined the bld to US

compenies. Singer-Link-Miles,

Grummen end Goodyear are

The three bids involving

Norsk Deta minis include e

Nord-50 32-bit erithmetic

processors, front-ended by the

The applications software will

be written by the contrect

winner, but Norsk Deta systems

software, including Fortren end

All three contenders bidding Nord systems ere using the

same basic concept, but each

is proposing different complements of memory and peripherals. The fourth contender is bidding a US mini,

likely to be a 32-bit machine from Systems Engineering Laboretories. Nord minis heve never before

been used in elrcreft simulators,

but they ere handling other

simulation tesks, including

systems for nuclear power plants and currents in the Baitic Sea. The contract is expected to

program development tools, will

complex of either three or four

the four bids being entered for a US Air Force simulator contract.

ilkely contanders.

new 16-bit Nord-10/S.

The requirement is for 18 The Identity of the bidders is

TO save on spare perts end deploy their computer resources more effectively, developing countries should limit the variety of computers they

Import.
This view wes expressed by Normen Reveil; e lecturer et the City University Business School, London, who yielted the International Conference on Computer Applications, held in Bengkok.

Speeking at a meeting of the BCS Specialist Group for Developing Countries, Revell reported that the conference delegetes differed aherply on whether developing countries could learn from the experience of edvenced countries and skip the early steps of computer development, or whether they needed to stert from scratch end

Making their mark in Munich

One of 18 UK companies that appeared together at Systems 77 in Munich was the Data Recording instrument Co, which oahlated some of its peripheral equipment range on the stand pictured here.

The Joint UK venture was the Reliab Oversess of the Company Port Office's telested service.

be awerded tomorrow (Friday).

The high regard in which the Nord minis ere heid among the

scientific community is

emphesised by the fact thet

CERN, the Centre for European

Research into Nucleonics in

Two networks are being established in Scendinevia using Nord-10 minis. Scan-

net - linking research

establishments in Stockholm,

Gothenburg, and Oslo - is a

store-and-forward messege

Information exchange, and

Uninet is n planned pan-

Scandinavlan pscket-switched

network which will eneble

universities to share their

switching system

Helsinkl,

Copenhagen

Geneva, now hes 70 of them.

ard and sponsored by the Business Equipment Trads Asso-One of the other firms the one of the other firms that took part, Compede, was making its first major public presentation at any exhibition. The main presentation on the Compede atom was of Gaelle, Compede's design system for the automatio

out 22,000 visitors attend ed Systems 77 over the five days of the show, 50 % more than went to Systems 75. A total of 470. companies took stands, including amost every major US.

#### **V77s replace ICL** systems in Sydney

THE former Varian Date Ma- is that a reservation system, fo chines, now Univac Mini Com- Flag Motels, run as a plio1 on a puter Operators, has given ICL a 2903, is to be transferred to V77 rough ride in Austrelle. V77 minicomputers have been or-dered to replece or supplement small ICL systems et four companies, two of which are

using the highly successful 2903. A 1902T st Beriel Haatia in Sydney will be replaced by n V77-600, and Psui Hamlyn, slso in Sydney, is putting in e 77-600 alongside its 1901A.

In Melbourne, perhapa the biggest disappointment for ICL

minls nt four sites. But Flag still runs two 2903s. Also in Melbourne, a health insurance fund is to replace its 2903 with e V77.

Overall, ICL's position in Australia appears to have been

placed for large 2900s, and the Queensland government has decided to replace its 1900 series machine with a Univac 1100/82 (CWI, May 5).

#### **EXPAND** YOUR PDP11 WITH D NA I VVIII D.IVI.L

INTERFACES SUB-SYSTEMS FAST DELIVERIES COMPETITIVE PRICES

BILLING MACHINES LTD CLIFTONVILLE ROAD: NORTHAMPTON ENGLAND NN1 5BU #EL (0604) 21911 TBLEX 31504



Interested? Then please phone Mike Gernat on 01-229 9239 (office hours) or 076384-618 (evenings - if more convenient)

Brazilian clamp-down on foreign minis

TIGHT restrictions by the

Central to the scheme is the contracts.

Central to the scheme is the contracts.

According to a South American According to a ovorseas compenies, end the government's own venture, from import or iooal manufacture of machines

Small systems companies, from the giant multinetionels to take their final form before the and of the yeer.

Small systems companies, from the giant multinetionels to from the giant multinetionels to showing their wares to the Brazillens, in enterfort to gendance the statement of the contest of the statement of one of the two hotly contested

can trade expert; companies like DEC, Data General and IBM with System 32 and 34 and pos-sibly Series 1—are less likely to

gain rights in Brazil than the smaller ventures. The Brazilian government wil

probably select a less powerful company, so as not to overpower the efforts of the government venture, Cobre Cobre has the rights to manu-facture Ferranti Argus 700s in Brazil and has also concluded an agreement with Sycor to manu-facture its Sycor 400 middle fecture its Sycor 400 under an

Argus 400 label (CW), April 14). The strategy for excluding the non-government-approved overseas companies from the market is not yet clear, but is ilkely to include prohibition from esteblishing a local factory, and high import tariffa Data General hes already

asked the US government to protest at the forthcoming Geneva Trade Conference

### How IBM deals with terrorist threats

THE recent battle between IBM and Forro Precision, inc in a United States federal court evincluded in the record of the okes memories of some embar-rassing revelations faced by the computer glant nearly three years ego. At that time IBM was with IBMs claims, that Forro discovered to be training its securty forces to infiltrate outside course of making machinery for organisations which, in IBM's kscustomers. As a consequence, opinion, posed a threat to the Forro was ordered to psy IBM

On September 16 of this year, Forro Precision, a Woodland Forro did not know that the Hills, Celifornis, manufacturer of machinery used to build disc drives, was awarded \$2.7 million when a jury determined that IBM had intentionally Interfered with Forro's business trust statutes and that Forro is practices in violation of entitled to punitive damages in Californin lew. The charges addition to the direct damages it stemmed from iBM's was awarded, resulted in no Investigation of Forro's affairs, verdict. The jury, which must

Forro's victory, according to attorney Joseph M. Alioto jur. The Forro suit is also related was in part due to IBM's use of Improper tectics to obtain a wsirant to search Forro's premises. IBM had contended that ita sctions were justified because its secrets were being used accused by IBM of steeling trade by competitive disc drive manusecrets from IBM's San Jose,

CANADA

Colin H MecCulloch, Internaional Advertising Consultants 915 Caution Tower, 2 Caution Sireet Toronto Fel (416) 354 2269 Cablos Inadcon, Tor-

Daniel Soubeyian, Compagnie Francaise O'Editions, 40 Rue du Colissa, Paris 8a Tel 010 331 225 7750

C Epis Eins-Kompass, SpA

Media-IBPA, R 518 Roppongi

Un House 1-3-11 Reppong Minato KU. Tokyo 106

Mi Jack N. Vieira Advertishment Snies Manogor IPC Business Press, 205 Eost 42nd Street Manogor

Street New York New York 10017 (212) R89-0700

Mr. Baymonii V. Barnes, IPC Business Press, 205 East 42 at

Street New York, New York, 1001.7 (2.12) 889-0700

**JAPAN** 

New York '

nesrly \$261,000 in dsmages. Forro's attomey contends that specifications it received from its customers had come from

Two other charges made by Forro, that IBM violated anticarried out with the ald of a former agent of the US Federal Bureau of Investigation.

reach a unanimous verdict, was split in its opinions, and these charges will be re-examined in

to snother famous trial in the American computer business, that of a group called the San Jose Eleven. The persona involved in that cese were facturers.
Sworn testimony describing the methods and naming some

Clevelend

charges were based.

imining some of its employees in methods of infiltrating outside organisations, alleged terrorist groups that IBM felt posed s potential threat

The possible use of IBM's security personnel as secret agents to spy on outside

#### Bugging the FBI and CIA

Profesolonel Intelligence changes in telephone switching equipmem made during the leut two years have made his

Mr. Rey Rickles, Ray Rickles & Company, P.O 80x 2008 Migni, Florida 33140 (305) Mr Frederic A Sauer Ray Rickles & Company 3116 Maple Drive N.E. Atlanta Georgia 30305 [404] 237.7432

Los Angeige
Mi Williom Maishall. Scott
Marshall Sands & Latta Tuc
1830 West 8th Street. Los
Angeles Cabilorna 90057
(213) 382-6346 Sen Francisco

Mi Richard Sands, Scott Mershall Sands & Latta, Inc. 85 Post Ollico, San Francisco. California 94104 (416) 421-7950

Mike Loughlin IPC Business Press Int. 1-4724F Pertitishine Honston Texas 77079 Tel (713) 493 6871 Telex

Computer Weekly International is sent free of charge to the following categories: Company directors, company secretaries, management services executives, civil servents responsible for computing, managament/computer consultants, lecturers and teachers, data processing managers, systems essiyets/O&M officors, programmore, operators, computer spligsmen, engineers.

Houston'

eventually cleared because IBM's agents had used improper methods to obtain the information on which the theft

IBM's security policies also caused a stir in the United States In late 1974, when It was reveeled that ISM had been

urganisations was studied in a

PHONE PHREAK Cupteln Crunch whom I wrote about in my lost letter from America ICW, September 18) is back in

the news. In un interview carried in Reporter, a monthly newsletter published in Sen Francisco, former phone phreek John | Captain Crunch) Draper cleims to have tapped the telephones of both the Federal Surseu of Invantigation and the Cart Investigation and the Cuntrel Intelligence Agency. The technique used by Drapur wee applicable to many systems. In the Unitud States, although changes in telephone with use

training course given to some IBM employees in November, 1974. At the time, IBM was appsrently concerned shout the danger posed by aubversivea in the United States and abroad. That concern may have been justifled, because the very materials used in IBM's secret course were atolen and turned over to an anti-establishment newspaper in Berkeley, Callfornia, which published them only days after the course

At the time the documents were published, IBM's chalrman, Frank Cary, said that he was "shocked" by the material used in the course. He also said that "il was only through a series of errors that (the material) was allowed to be used in even a

single pilot class."

Dan Burnham, at that time 1BM's top public relations man, at first said that the material was not prepared by IBM, but was developed by the International Association of Chiefs of Police

(IACP) under contract. Both of those statements proved to be misleading, es a latter from Quinn Tamm, then president of IACP, to Cary

Tsmm's letter decried IBM's placing responsibility for tha malerials entirely on IACP. The Course materials according to course materials according to Tamm, were developed to meet IBM's specifications and waits reviewed by the gemphical manufacturer before they were

### LETTER FROM america

**By Hesh Wiener** 

The course materials state that IBM should be wary of terrorism in such places as South Africa and Latin America as well as the United States, and that the corporation should develop an internal apparatus for dealing with threats and disturbances. Among the organisations singled out as posing a danger to IBM are the leftist Nutional Camers of Labor Committees, the rightist American Nazi univenient, and the Jewish Defense Lengue.

IBM was told to develop treined operatives at each of its sites to deal with extremists, and to build a central corporate command to co-ordinate the

local operations. It is not known whether IBM changed its security procedures as a result of the ill-fated course, but the Forro, Telex and San Jose Eleven cases provide a glimpse into the company's methods of dealing with threats. (CBMS).

Group consulting imp that, like those ter-

"Electronic mail with fastest growing pandle. equipment and terminate. during The 1980; E Anderson, The Mar. unduate of Haved L Schnol claims that the remaining market progenerate a \$1.2 thousand nisiness in terminals are cessors, compulers and nicotions services with next five years. In a recently release

on electronic mail, the l. Group notes that the cated user of automit; services has several our building an electron: system. One obvious en facsimile, but othersing TWX-Telex and prinz typewriter message sa Newer technologies exc: available choices to b Cll switching system to word processing and c ter-based message as

## "ELECTRONIC malic addressent sex salules about it but now."

it," says Howard Andron the leading US ander chectronic mail. strument in the trial of strength between AT&T and IBM, the Auderson, presidente Hoston, Massachumia US-wide Bell Data Network planned by the telephone company is likely to have a serious

> This is the view of Gideon Gariner, analyst with New York slockbrokers Oppenhelmer &

> Co. The Bell Data Network, es yet unannounced although it has been described to US share analysts, is intended to provide a data communications facility which provides e ready-made alternative for much of the arduous network implementation that users now have to undergo (CW, July 27). It would take over the role of

several communicationa hardware products at present supplied by mainframe manufacturers and communications equipment companics. Among these are central pro-

cessor front ands, multiplexers and concentrators, remote controllers and Intelligent ter-

computer developed by CII

Five CS-40s have already been

built by CII and CIT-Alcatel will

build another five at its Velizy factory next year. After that,

year will interfaced to E-12

elephone switch.

### to computer firms conversion, error control, ter-

minal polling, message routing and rerouting snd formatting.
Some of these facilities ere
offered by the "value-edded" carriers such as Telenet, which leases AT&T lines to provide a packet-switched service.

The sheer size of AT&T, one of the largest companies in the world, means that such a service would have a far more pervasive Impact than Telenet. In addition It would include such fecilities as a high-level language, allowing users to epecify their communications requirements in near-English form.

While this would make it a tough competitor for IBM's Systems Network Architecture, Its Impact on other manufecturers which have already mede a ma-jor investment in their own network architectures, would be equally sarioue.

Furthest elong this line are Burroughs with BDLC and Digital Equipment with DECnet. Univac's Distributed Communications Architecture and Honeywell's Distributed Sys-

large-scale telephone exchanges gives the French a big lead over

the UK. The British equipment

for the same market is

designated System X and

As for IBM, it is fully commit-

ted to the concept of distributed processing, despite Ite traditional emphasis on systems which centralize processing power. Series 1, System 32, System 34, 5100, 3790 and the forthcoming Orbit minicomputer sre ell potential distributed processing products, and telephone switching equipment such as the 3750 is also an element in IBM's grand atrategy, as emphesised by en in-depth briefing at the compa-ny's La Geude, France labo-ratory in October.

AT&T is equally committed to inning e share of the burgeon-Ing market for office automation and transmission eervicea, including electronic mail and electronic funds trensfer. A subset of the proposed gell

Deta Network called Trensaction Network Service is already perating in some states in the US, providing a specialised funds transfer service to eupermarkets.

## Bell network threat

#### Lecturer of Year award

Crowning two years' success in astablishing Logics in Australiu, Don Jones has been given the Australiun Computer Society's Lecturer of the Year ewerd for 1977. Au part of the sward, hu is currently on a tour of Australia, lecturing on mincomputers in data communications.

Jones, mensging director of Australien subsidiery Logice Pty for the first two yuers of its existence, will return to Logice UK efter his tour. He will be succeeded es Australien manualing director by Time manugine director by Tim Cooke, previously in charge of the Nordic subutdiery (CW,

### **Leave small systems** market to Redifon' says Heinz Nixdorf

ter industry to capitalise on the enormous market offered by the UK Big Four clearing banks worries Heinz Nixdorf, founder and head of Nixdorf Computers.

"I think that ICL was wrong to let the Americans win the whole of that market without s

fight," he says.

The foreign subsidiaries of Nixdorf are free to decide which products they will market from the Nixdorf catalogue, but Herr Nixdorf expresses himself uneasy at some of the decisions taken by the UK company. Although Nixdorf Computer now owns Entrex, the licensor of

the Redifon Seecheck key-to-disc system, which has been enhanced to include general data processing facilities as well as data entry, Herr Nixdorf sees no need for any conflict between the two companies in "The royaltiea we get from

Redifon are fsir," he says. "In my personal view, Nixdorf UK should leave aside the 2870 end concentrate on the 8864 banking

terminal system. Two hundred people is about the right number for selling banking systems,' says Herr Nixdorf.

"It is unwise to make compe-tition egainst one's best friend, and we should leave the ameli systems market to Redifon.

Nixdorf UK counters by saying that the market for terminal orientated smell business systema is so large that the £4 to £5 million business done annually by Nixdorf and the £10 million or so done by Redifon is sufficiently amail that there is no danger of the two companies damaging each other by compe-

As for the benking aystem, e concentrated marketing effort is now being built up.

#### **Fourth Century**

THE fourth NCR computer to be ordered by the National Bank of Poland has now been installed. It is an NCR Century 251 eystem, and this isteet order brings the value of NCR computers used by the bank to ebout \$4 million.

#### And France Germany Greece House Poland Great Britain Special Control of Switzer Reports South Africa Sweden Switzerian Turkey Spain Portuga Italy Bulgarie Czechosid kia Ivory Coaat Algeria Auatralia Belgiu Britain Portuga Iceland In Iraq Portuga Reportuga kay Sp. Portug ark Eir inland ermany rica Sw Algeria paris No Holland Vitzarian y Greece Icelend an Iraq Switzer key Spi Belgiu ark Eir inland Poland Graat Britain S apore taly Bulgeria Czechoel kie Ivo Auatrie Coest iermany rica Sw Algeria seria No Holland vitzarlaı Turkey Spein Portuga

#### equipment from STC witches, and another three will Development contracts totalling be used to control crossbar about £20 million for the three Switches. Several enhancements are being made to the CS-40, which companies were placed by the UK Post Office last summer (CW, August 11).

### Canthere really still bepeople punching cards?

Punched cards have a long

More than 50 years longer than

Needing an easy-to-come-by data entry medium in the 1940s EDP pioneers chose the punched card.

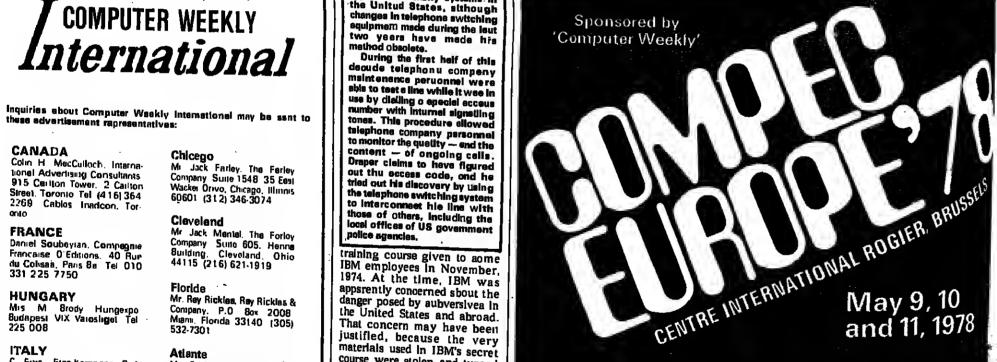
rever?

★and 53 counties nationwide.

Whether you have two or onehundred-and-two terminals CMC KeyProcessing is the input medium for you.

entry system.

first in key-to-disk



Compac Europe, Room 821. Dorset House.

'78 - pieasa send me detalla.

Complete and flatere as accepted

\* I wish to visit COMPEC EUROPE'78

used. The course Cary called a

"pilot" was given on November

4-15 at IBM's Management

Development Centre in Glen

Cove, New York, but the course

and been previously tested on

At the time Tanım wrote the

letter, which he also made

available to the press, he said

that IACP was contemplating a

suit against IBM because of the

corporation's statements. That

idea was dropped later, and

IBM admitted that Tamm's

The controversial meterials,

pert of a larger program dealing

with corporete security,

eppeared in the form of n

booklet entitled Security: A Mo-

nagament Style/A Course of In-

etruction in Corporate Pratsc-

While warning IBM's people

about the dengers of taking

matters into their own hands

the material suggests that IBM

contempletes the use of

"counter-terror operatives, skilfully pleced," and to

understand the use of the "right

contentions were factual.

tive Sarvices.

kind of provocateur."

six IBM executives.

The third annual specialised exhibition devoted sea and exclusively to small computers, computer people and systems to be staged in Bit

COMPEC EUROPE in 1977 drew 5,300 victions from the craem of the computar world. They ceme from as fer ewey as the USA, Ruasie, Jopan, Finland, Italy, Hungary and Poland – as well as Irom the great industriel areas of Gormany, Holland, Belglum, Frence and the United

COMPEC EUROPE is sponsored leading United Kingdom publication "Computer Waskly" and "Dala ...

Talox: 25137 BISPASC

Chris Timmina, Exhibition Menager Stemlord Street, London, SE1 9LU, England. \*, I wish to exhibit al COMPEC EUROPE

Processing", and is organised for the fill the Promotions. All at a members! Businesa Preas at Porset (2015) Stamford Street, London St. England Talaphona: 01-26 | 800

#### Dataterm speeds South African school exam results

be built by CIT-Alcatel

THE large CS-40 switching is based on the Iris 80. The 1K-bit

before the merger with
Honcywell Buil is to be
manufactured by CGE
subsidiary CIT-Alcatel for use

manufactured by CGE
subsidiary CIT-Alcatel for use

manufactured by CGE
subsidiary CIT-Alcatel for use

with the E-12 time-division the CS-40 and the E-12 for

annuel production is planned to progress from 30 to 160 a year.

The first two to be built next

A DATATERM 3 optical mark reading system from Data marks for the 1,200 echools in Recognition has been installed by the Transvaal educational authority in South Africa to process school examination

apers.
There are about 20,000 papers of this type annually from pupils taking the slandard and higher grades of the Senior Certificate examinations, and these provide about 360,000 hand-written and which will now h loaded on to magnetic tapa via the Datatorm 3.

The Transvaal provincial vernment's dual Burroughs 6700 computers process this formation within eight hours. Another application of the OMR system will be to handle and nine the annual 300,000 forms giving systems.

employed by the administration, and hospital patient statistical Data la captured at the rate of

the area, date aheets on the

24,000 teachera and lecturers

Honeywell terminals connected

frictions heing imposed by fatiunal privacy and security igislation on international data ow is to be staged by Onlina in assets early next year. Laws enacted in Sweden and

est Germany and legislating ending in France, Holland Austria, Norwoy, Denmisrk and pala are likaly to impose new gulations and controls on the ansmission of data abroad, Minging problems and extra

don University; end Carl Rauterskiold, of Swift. Tha conference will take place

February 7-9 and le non-residential It costs 17,500 Bel-Ringing problems and extra further details can be had from Online Cleveland Road, UxAmong the speakers will be hridge UBS 2DD. Tel. (89) 39262

up to 60 A4-size documents a minute and this la encoded on to magnetic tapa via Honeywell-The system replacea a ceries of

to Honeywell 316 mini computers at provincial government headquarters which, together with the twin Burroughs machines, operated two data communication processors, 190 online terminals and nine remote job entry

#### Privacy laws conference A CONFERENCE on the res-

Christopher Dayton, EEC science and technology director; Frits Hondius, EEC ditectorata of legal affairs; Jan Freeze, Swedish data protection board; Professor Peter Kirstein, Lon-

at the Europa Hotel, Brussels, on

### 31 Countries\* worldwide use CMC British made key-to-disk equipment

computers, in fact!

But who wants to be a pioneer for

KeyProcessing - the complete data

### The Scandinavian market

MANUFACTURER

tacks of large mainframes? Cen they control large databases affectively? Is the distributed processing ring network a practical elternative to the mainreme-besed hiarerchical network?Witi

These questions have been the stuff of omputer conference discussions for

ed scepticism about the distributing processing concept, but what distributed processing edvocates are predicting for the 1980s is already happening in Scandinavts. Thore, two of the three leading. leading Scandinevien menufecturers, Norsk Dets, end Regnscentralen, heve been installing distributed processing

Nersk Data is even implementing Codesyl competible distributed databases on competible distributed datab networks of 16-bit word minis.

This is comewhat peradexical, because 15 years ago the Scandinavions were Europe's leading practitioners of controllised DP. Not only were their government departments and large corporations

Datasaeb

terge meinframa, but even small to madium users were clubbing together to

was strictly fer economy resear to make it ell the more significant by a same economy mindedness shed a be leading them away from maining not only te distributed natwork by distributed datebases as well. In its dinavier manufacturers certainly we they have something heters as the comments of the comme The reason why small Scendinavien users centralised in the early 1990s wee no philosophtes bellaf in centrelised menegement or processing, however. It they have something better and a

Regnecanirgian

### New lease of life for Datasaab

Swedish industrial group, them more suitable for the small Saob-Scania, is Datasaab, the only Scandinavlan DP equipment maker that has not yet entered the communications network market. The division has been hoving a tough time and in order to ensure its survival the Swedish government la pumping funds in and a new company has been formed which comes into official being on January I. To be known as Svenska Dsta it will be owned 50-50 by the government and Saab-Scanla.

The other component of the which specialises in air traffic control and hospital systems, and elso makes the Alfaakop display terminal. Heading the company is Stansaab's managing director Gunner

Saab-Sconia also has a 51% share in the Saab-Univac marketing operation in all Scandinavian countries except Finland where it has only 26% because of a three-way split with that country's computer equipment company, Nokia.

Datasanb has been longer than most manufacturers in the terminal end of distributed processing, since it was the first company to offer an intelligent minicomputer controlled banking terminal system as far back as 1970. That was the D5 series. now marketed not only throughout Europe, but even in the US.

In the general purpose busi-ness field, Datasaab offered only the DI2 office computer and DI5 amall business computer, whose proprietary longuages and ac-counting packages, and lnck of

**ON SHOW AT** 

SYSTEMS '77 ...

Whatever your field of activity or your

application, the Megadata "System 700"

is adaptable to your needs, and ansures

full compatibility with already existing

equipment, thus considerably improving

the systems overall efficiency.

**G**eurotech

In Aligust, however, Datasaab widened its options by announcing the D16/30. While designed partly as an upgrade for existing D15 ussrs, the D18/30 offers slso s number of features that will appeal to features that will appeal to organisations with outlying locations.

It la programmable interacti-vely in Cobol, so that large uaars can simply transfer to distributed D18/30 systems smaller Cobol source programs originally written for a central mainframe. It offers also a variety of terminal emulators, allowing it to exchange data online both with other D18/30 systems, and with IBM and Univac mninfrances.

The D16/30 emulators cover the IBM 2780/3780 and Univac DCT 2000 or 9000 RJE, and alao include an iBM 3270 emulator that will allow D216/30 workstations ta interrogate directly a hosi IBM 370 computer's disc files during local transaction

This feature will also allow Datasaab to upgrade users of the Stansaab Alfaskop 3270-compatible display clusters to D16/30 distributed processing T

Datasaab has also anticipated the computer market of the 1980s by ploneering special purpose hardware/software packagea for certain types of user: notably the DI5 iravel agency system that can print IATA air tickets and perform the IATA accounting routines as

······································						Augenitt at All					
MODEL	D15	D16/3D	NDRD-12	NORO-10/S	NDRD-5D	RC 3600	RC 6000	RC 8000			
MAIN MEMORY Minimum capscily (bytes) Msximum capscily (bytes) Cycle ilme (Nsaconda)	9K 16K 980/1,200	32K 128K 550/1,200	9K I 28K I ,000	84K 512K 450	12BK 4M 300	16K 64K 1,200	16K 54K 1,200	96x 12k 800			
DISC STDRAGE (MAX) Meximum capacity (byles)	40M	120M	80M	792M	792M	284M	264M	3,964			
TERMINALS Mex numbar par system	18	32	16	84	. 94	16	4	BI			
SDFTWARE Dpsreting system mulliprogramming of: —Transaction processing —Multi-accass program dayalopmani (time sharing) —Background baich	OS/15 Yes No Yas	QS/18 Yes No Yes	BS YBS		Sintran III No No Yas	Deta entry No RJE to host	Syalam 60 Yes No Yee	Sysiem to Yes Yes			
La nguagas	Logic-3	Gobol Logic-3	Gobol RPG II Fortran IV Basic Gorsi 99 Pascsi Simuls Nord-PL	Gobol RPG II Foriran IV Basic Goral 6B Pascel Simble Nord-PL	Fortran IV	Muell	Extanded 9ssic	Extended k Farired li Algol			
Oslabssa msnegemsni system Godssyl compalibla	No	No	Sibss Yas	Sibaa Yea	Sibes Yes	No	No	CFS Na			
Communicationa noda control	No '	No	Nordnat	Nordnet	Nο	ACNET	No	No			
RJE Igrminal amulskon	No	IBM, Univsc	IBM, COC Honsywali Univsc	19M. CDC Honaywell Univec	No	I9M, ICL Honeywell Univac, Slemens	Nu	Na			
BM 3270 terminal emulsion	No	Yes	No	No	No	Yes	No	No			

Norak Dela

relaxed.

RC 3600.

#### From bureaux to networks ful to spread outside Denmark to

Danish manufacturer Regne-centralen has followed Norsk Data, both in attacking the front-end communications processor and distributed processnetwork markets, and in offering multi-mini configura-tions to perform mainframe

Unlike Norsk, RC has had a marketing network of agents and wholly owned subsidiaries throughout Europe for some time. But outside Scandinavia, this network has been aelling mainly the RC 2000 high-speed paper tape reader to the OEM market, and in most countries offline data conversion systems and RJE terminals.

What is less well-known is that these products have been only the fall-out of RC's main activity, providing service bureau facilities. Its name, indeed. means The Computer Centre in

Regnecentralen was formed in 1960 with the Danish government's encouragement to provide bureau facilities to local authorities and small to medium size businesses, as nn altsrnstive to IBM 1401 and similar amail computer systems whose imports might have been too heavy a drain on the balance of

Its first computers were Daniah Gler machinas designed in 1958-59 st Copanhagen University, though these were soon supplemented at its main Coppenhagen, centre by four CDC 1604s.

mes of paper tape reaching its service bureaux RC .developed the RC 3000 paper tape-to-magnetic tape and magnetic-to-paper tape converter in the late 1960s, which woa marketed for a while by Olivettl throughout Europe, In 1970, it added a Data General Nova 1200 as controller (RC had become Data General Danish agent that year) for eaaler character code and format conversions, and this became the first version of the

and Austria. RC has thus from

the beginning had a small

manufacturing activity for Gier

computers, and their compatible

successor the RC 4000 designad

In 1909. Until recently these

were built only to meet the

requirements of its service

bureaux, and also those of

Eastern customers, where the

Gler acquired a following in the

The development of RC hard-

ware products reflects fairly

closely the evolution of the

Scandinavlan amall to medium

user market from batch pro-

cessing on remote service bu-

reaux to online transaction

processing on their own premi-

To process the growing volu-

By 1972, many RC users required heavier terminals than paper tape transmitter recelpenhagen centre by four GDC vars. For them, RC dasigned an 1604s. RC 3800 terrainal version that its service pureau activities could transmit pader take to the service sufficiently southers.

from the line. In 1973 the RC nelghbouring Scandinavian countries, and West Germany 3600 was offered as nn R.II. terminal that could exchange pringrams and data directly with most uninframes by emulating the RJE terminals.

Also from 1973 RC offered its burean users the Datapoint 2200. for which it had become the Scandinavian, West German and Netherlands distributor, and from 1974 it offered software on the RC 3600, allowing it to be used as concentrator for dnta days before the Nato embargo from the cassattea on several on US-dealgned computera waa Datapoint 2200s. Since 1976, the RC 3000 hns been available as o niulii-station key-to-disc intelligent data entry aystem.

The final stage has been to offer full distributed transaction processing facilities with the RC g000, a 24-bit word midicompu-

Gler systems; hence the 24 word length. All applica software developed for the systems at RC bureaus: avallable to RC 8000 users.

In nichitecture RC bis Inwed Norsk Data's must cessor architecture Nord -50/Nord-10 systems come out with something the almost identical to the DET-1

The RC 8000 relies on a [5] word front-end processor. all I/O. Like Nord-10 and 11. PDP-11 users, RC 3600 F users can increase the bu processing power of the tems simply by plugging 11 8000 processor and and

The 8000 is fully upward Continued on page 3

TO PURCHASE

#### RELIANCE COMPUTER LIMITED

FOR SALE 370/148 2 mag. 370/145 512K 370/115.96K 360/20 16K 3333-001 3330-001

IBM 370/168-370/158 370/135 3830/002 3420-007: Any any 1/0 equipment

9 Commonside, Sheffield \$10:10 Telephone: 0742 669147

### Norsk success with 'mainframe' minis

(3) In 1972 when CERN was

evaluating the tenders, the

Nord-10 was the only competing

mini to be able to demonstrate a

fully working multi-access time

Nord-Ops.
Norsk Datn was ahead of its

competitors in this field, because

its Nord-1 and Nord-10 minis

had been extensively used by

Norweglan research Institutes

In 1974, Norsk released the

current Siniran III operating

system which combines real

time control and background

batch multiprogramming facili-

tles of Sintran II with Nord-Ops

multi-sccess time sharing. Many

mainfraine manufacturers have

found such mixed mode operat-

ing systems difficult to imple-

ment efficiently on larger and

Sintran III also Includes the

Sibas database management

system, which is not only

applications independent, but conforms to full Codasyl specifi

cations. In 1975 came the

Nordnet data communications

software, which allows any

number of Nord-10 systems to

communicate online and to pass

source programs to each other

A Nordnet can include main-

frames of any size, as indeed

they are in the Scannet network

which links all Scandinavian

research institutes in the

Now that Norsk Data has also

entered the British market, we

must expect ICL to be added

shortly to the list of mainframe

manufacturers which Nord-10

minis can front-end, or with

which they can communicate.

supply "mainframe power." A

Nord-50 offers the processing power of an IBM 370/15g-3 or

3031 for little more than £100,000. The company has

already delivered 10 Nord-50s

and three of the earlier Nord-5

Users include the Norweglan

nuclear research Institute, and

both the Norweglan and Alge-

rian weather forecasting cen-

tres.
The architecture of the

Nord-50 providaa a foretaate of

probable 1980s trends. It is not a

Like DEC, Norsk Data car

manner of EIN in the EEC.

automatically.

more expensive systems.

to save money and foreign

sharing operating system,

By Fred Lamond

pushed its minis into mainframe territory is Norsk Data of Norway, which has entered the UK market through the agency of Richard Norton and Associates (CW. October 20, 1977).

Norsk Data was founded 10 years ago, and its main product line has been a family of 16-bit minis, the Nord-1 and Nord-20. These were succeeded in 1973 by the Nord-10, Nord-12 and the Nord-42 OEM version.

By the end of 1977, it will have delivered over 800 computer systems, including some 300 Nord-10, and close on 200 Nord-12 and Nord-42 systems. Of these deliverles, 60% have been to the Norwegian home market; 20% to other Scandinavian countries; and the remaining 20% to Europe — Including over 40 Nord-10 to CERN in

At first sight, Nord-10 and Nord-12 specifications seem well in the mainstream of 16-bit word minicomputer design and per-formance. A 16-bit address length limits each individual program or program segment to a maximum length of 64K words, which is also the maxinunn main memory size of Nord-12 and Nord-42.

On the Nord-10, a memory mapping facility allows main memory to be expanded to 256K words, equal to the Data General Felipse but well below the Digital Equipment PDP-11/70 2 Megabyte maxi-

But if the Nord family was just part of the minleonipuler manistream, would the Nord-10 have won the CERN order for 24 minis to control its 400 GeV super proton synchroton high-speed nuclear particle accelerator, against competition from DEC, CII and Télémécanique? And would other CERN departments have switched to the Nord-10 from DEC, Hewlett-Packard and CTL minis?

The reasons given by CERN for its choice of Nord-10 systems

(1) The Nord-10's full-duplex CPU bus had five times the throughput of the DEC PDP-11/40 Unibus.

(2) The Nord-10 bus uses a differential method that is far more impervious to line noise than that of all the competing minis, an important considera-

classic large general-purpose mainframe, but rather a mini

### Danish network

memory to their existing configurations

Unlike the Nnrd-50, however, the RC 8000 does not depend on its front-end RC 3000 for data exchanges with disc and magnetic tupe backing storage, nor for its operating system. Its effective main memory espacity is not limited by the RC 3600's 128K byte nddressing capability. On the contrary, an effective 20-bit address field allows each individual program to uddress up to IM words, far more than must 16-bit word midis with memory mapping facilities. Total main memory can be expanded to as much as 4M

Like Norsk Data, RC ls implementing a data network to link all its service bureaux Throughout Scandinavia, RCNET. This is designed as a packet switching network of leased lines, in which RC 3600

work control and interfacing

Nodal RC 3600 systems may do double duty as RJE terminals on sites where only input and output is required, but where a site requires also some local processing power, they will normally front-end an RC 8000 or an IBM 370 or other main-

RC is also offering its RCNET packet switching network control software to other users planning 's private packet switching network, and foresees such applications as a major nnarketing growth area. Since 1978, RC has been

manufacturing its own version of the RC 3600, but this remains. fully compatible with the Nova 1200 systema used previoualy. Some 500 have been delivered since 1971, including 150 in Scandinavia, and 45 RC 8000 systems since 1970, all but five in Scandinavia.

100 miles (100 miles)

smaller scale version of the CDC Cyber 76 or Cray-1. Not only does it perform its own high-speed calculations by means of a pipeline of functional processors, it works like other

supercomputers as a "slave" of a front-end Nord-10 or Nord-10/S. The Nord-50 shares part of its main memory with its Nord-10 or Nord-10/S front-end but this effectively limits the Nord-50 to not much more than 512K bytes of main memory.

Norsk Data Is working on this memory bottleneck, and may announce a less restrictive front-end some time in 1978. In the meantime, It is quite prepared to offer Nord-50s as back-end nigh-speed processors to users of other minicomputers, though none have been ordered as yet.

EUROPE represents a peal of technical skills and management telent that is vitel for efficient production. That is the view of Michel Feu can, director general of staff services for 19M Europe.

Speaking at 19M's Meinz ptent in West Germany, Faucon and other speakers outlined the concepte involved in production and management employed by 19M in Europe. ISM in Europe,
"In Europe elene, ISM hes 14 plent locations," ha

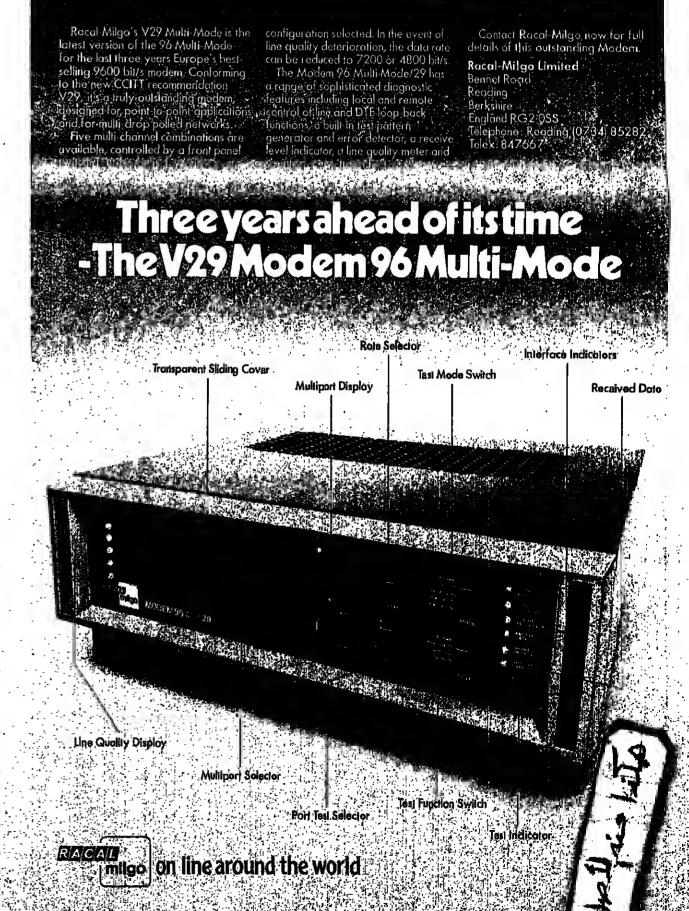
said, "our elm is to menufacture in Europe everything we sell. Bubstantial manpower is required for this end from a total of about 92,000 employees in Europe, from a total or about \$2,000 smpayous ... 22,000 era engaged in manufacturing."

Of this 22,000, 2,400 era employed at Mainz, which produces 370/145s and 149s, the 3340, 3344, and 3350 disc units, and the 3348 disc pack.

design" concept was given se en exampte of the company's production philosophy. Under this, a product could be designed at any one of 19M's 25 laboratories for epplication on a worldwide scale. Information about such projects was communicated to product and control of the con

Heinz Fridrich, group director of menufecturing fo ISM Europe, described the "eleter plent" concept which is used to encourage internet compatition. Mainz listes regularly with the Sen Jose plant in California an disc drive data.

Dur picture shows the assambly at Moinz of the read/write heed-arm cerriego for the 3350 disc drive.





Computer Weakly International, November 10, 1977

#### Malmo accent on 'friendly data processing

Swaden developed its data processing in the traditional way, apgrading from central mainframe to

But in 1975, the city felt that central processing would not give the many varied agers effective and what is called "friendly data processing" at a ressonable cost. It also worked out that the applications it had planned would need a system which could hendle 130 terminal transpetions a second.

It also found that an IBM 370/148 handling 10

transactions a second would cost five million Kronor (£670,000) compared with a mini handling foar

trensactions a second and coating 200,000 Kronor (£23,000). The number of 370/148s needed to handle 130 transactions would cost 10 times as much as the 32 minicompaters needed.

These simple comparisons, plas the fact that by 1975 menufactarere were developing database software, Cobol compilers and large storage capacity for minis, led Malmo to move to distribe ted processing. So far it has installed 14 Data General

minicompaters which as poort 90 terminals and handle applications ranging from maintaining waiting that for old people's homes to billing harbour charges at the olty's part.

All you wanted to know about your store-but didn't have time to find out

NATURAL PROPERTY OF THE PROPER

To: Sweda International, 27 Goswell Road, London EC1M 7AL. Tel: 01-253 3090

Please lai me have a sample set of Sweda 500/80 Reports

**SWEDA** III

### IBM role in brave new Afghanistan

markers.

seemed to be there.

neas Machines.

lan Hugo reports from Kabul

tons of assorted door handles and sell 100, how many have you left and what is their value? This been a population census. In a couple of years, with the help of the UN, there may be one. Is one of the problema being tackled by the sole commercial computer installation in Afgh-

The IBM 360/30, 32K memory, with four tape drives, card reader and printer was bought five years ago by a consortium of airlines, banks and hotels and was given strong IBM aupport to launch a brave new Afghani-

The effort has given IBM 100 per cent of the market, for the other machine in the country is an 1130. This was a gift to the Met office from the World Meteorological Organisation.

To understand why there are not numerous 360s as a reward for this initiative, you have to understand Afghanistan, as IBM

has learnt from hard experience. Afghanistan has an estimated population of 17 million — es-

information The datathat creates this information is

reports — whenever they are needed — covering the vital areas of sales analysis, slack

Swords, with over forty years expendence in ving the problems of refailers, has designed these reports specially fer you.

These reports speriming for you.

Soud in the coupon now to a sample set of typical Swerta Managuanent Preports. If is the best way to find out just how comprehensive.

Sweda has the answers

500

The trouble was that in Farsi, one of two local languages, the characters for A and I, as popuarly written, are interchangeable. To avoid further embarchanged to Afghan Computer I apoke to Mr Vaz, an Indian,

But with all tha basic govern-

over the inevitable pot of tea. Was he the chief systems analyst, I inquired? No, he smiled, just the only systems

control problem arose because import quotas and taxes are ultimate success.
concerned primarily with Meanwhile, IBM has not given weight, so that conversion to up either. The former educa-

the import/export balance of the the installation and has stanted country; this, plus long borders with Iran and the Soviet Union and just two frontier posts. In turn, this complicates an attempt at a census, since an im- chosen because the language of portant temporary export is instruction is English, rather

the IBM maintenance engineer, variously by other faculties. The also an Indian. He explained that Dean of Engineering was 50 the installation tended to look to pleased with the course that he India for its trained staff but that has made them a "compulsor

How was the electricity supply. I suggested tentatively? At will get its own machine.

was very good, he said, and sky IF you receive a stock of two timated because there has never the telephone system. Both had been designed and Installed by

The real problems, he said were of resistance to change (now where have I heard that In the neighbouring Hindu Kush mountains, In chaikhana (tea shops) cowering below two In five years of operations the ancient 200ft high Buddhas, you

Inatallation has achieved 2 can buy floor apace overnight next to a wood store, and as usage of only 100 hours per month, all statistical, accountmuch tea as you can drink, for ng and inventory work. 7p — hardly the place you would expect IBM to look for new

This work posed real problem because quantitles and values that started off vague tended to get vaguer as they progressed ment data to collect and some through the systems.

aignificant industry (banking Hard figures, If you west and textiles), the opportunity foolish enough to attempt them could so easily rebound on your own neck; everybody had to make a living somehow. So The problems started with the name. Proudly calling itself iBM, the installation quickly found itself known as ABM, which was there were no simple applications in practice. What of the future? Well. presumed to mean Afghan Busi-

there was a lot more statistical and accounting work to be done. if people could be persuaded to produce figures.

What about government statistical work? Well, they were doing some for the Ministry of Education but otherwise .... polite shrug of the shoulders.

Optimistically, Mr Chops suggested that with government support there could be "a grat leap forward" and Mr Vaz en-thuslastically concurred. Both have worked for over two years He explained that the stock at the installation and have ob viously retained their faith inits

unit value was difficult.

This is one reason it has been impossible to produce figures for the import (export belonce of the import).

The former to meet difficult.

The former to meet difficult.

Mr N. V. Balasubra, has moved in as resident IBM manager at the import (export belonce of the import). giving PL/I courses at the Eagineering Faculty of Kabul University.
The Engineering Faculty was

than Farsi, Pushtu, French et We were iolned by Mr Chopra, Russlan - languages used the programmers and operators choice." Soon, too, the installation hopes to have a System 3

#### French govt earmarks £73.5m for DP sector

EMPHASISING tha commitment of the French government to the national computer allocated by the French is about industry, the Industry Ministry a quarter of what the Japanes has announced that 82% of its budget for 1978 will be devoted to various aspects of computing.

The sum proposed is 630.8 millon Francs (£73.5 million). Of this, 60% (383 million Francs) is set aside for CII-Honeywell Bull, and 20% (118 million Franca) for keeping the former CC factory at Toulouse in business. The remaining 20% la allocat-

ed to development of the component industry, perl-Informatic sector growth contracts and promotion of the use of computing.
The lion's share of this, 50

million franca, goes to develop- government.

government is Investing in development of VLSI. Growth contracts airead

Logabax, SEMS, Pyral, 635. agreed with Sintra-Intertechnique, IER and shortly. Benson, will account for 14 million Francs. Promotion of the use

computing is in the hands of a body called the Technical Combody called the Technical Computing Centre. It is similar to the UK's National Computing Centre and will get 23 million Francs, £2.7 million. By contrast, the NCC is to get £1.7 million over three veer from the UK. over three years from the UK

#### South Korean order for ITI

THE Belgian-designed ITT Me-taconta 10C telaphone switching system, which includes reed relays similar to the UK TXE-4 system and is controlled by a specially-designed ITT 1602 stored program control computer, has won a major victory in South Korea against competing aystams from GTE and AT&T of the US, L. M. Ericsson of Sweden, Siemena of West Germany and Fujitsu, and Nippon

Electric from Japan.
The South Korean contract worth well over \$100 million and involves the establishmen and involves the establishment of manufacturing facilities for the equipment on behalf of the State-owned Korea Telecom-munications Company.

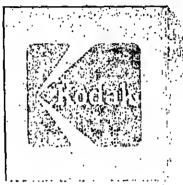
But the first systems in the

Installed will be manufactured by ITT's Belgian Bell Telapher Manufacturing Company shed

## They all talk the same language.







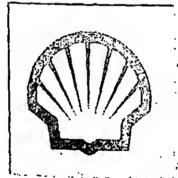












Whatever their business, whereve

language. They're members of the

world'e largest software product

usar group - 1200 leading installe-

tions on evary continent, who heve

60 to 90% eavings, MARK IV is to-

day'e leading software implemente-

tion eystem, because it gives man-

egement the information it needs,

when it needs it. At 60 to 90% eav-

ings in time and cost compared to

conventionel programming mathods.

That's bean proved during a dacade

Over the years, MARK IV has been

1500 improvements and 19 major .

releases. Today, it's by fer the most

comprehensive and versetile soft-

ware product evailable, with trans-

parent interfaces and on-line quary

facilities to the DBMS in widest use. finaholel ec

continuously updated, with over

of cost-effective use.

chosen Informatics MARK IV .

Sveteme.

they are, they all talk the same







0-70 in 15 years. MARK IV Systems era devaloped and mainteined by Informatice, the world'e largest inde-. pendent supplier of propriatary

softwere products — end one of the

Informetics heve expanded from a

smell profeesional service company

into e \$ 70 million globel operation.

were producta as well es a wide

Informatics now offer over 20 eoft-

range of professional and data services. We keep adding to the liet.

Wide product range. For example, we've introduced MONITOR IV\*\*

a family of advanced teleprocessing

monitora, including INTERCOMM

BETACOMMEM and MINICOMMEM

for deta transmission and the ulti-

mate in data security and storage

optimination, SERIES IV M today's

softwara system for data entry

end velidation. ACCOUNTING IV

comprehensive and expendable.

financial accounting system

most flexible distributed proceeding

ganeral ladger, eccounts receivable, accounts payable, the eesy-to-install,

SHRINK, the deta ancryption eyetem,

feetast-growing. In just 15 yeers

Your OP operation is resultsoriented, informetica products are, too. Which is why it will be worth your while to see us about your soft-

ware needs, and the informatics products that suit them beat. You'll find we talk the same lenguage.

informatics

MARK	IV S	yste	ms[	3 Oti	her Ir	iforn	natio	08 <i>a</i> 0	ftwa	ra p	rodu	cts. (I	-188S	е вр	eciry
Name		:		:		•					-, -				
Title	1 i .		- <sub>/</sub> : :	. 19									eger <del>Leit</del> e	<u>;</u>	200 303 444
Company			٠., ٠				i ,	, 	خومسين	١٠ ٠			<del></del> -	: 	
Addrese	191	· }	. • • • •		- 1										
		`	11.31 21.21			1. ) 11. (1. )		Tel	ر'ا ب <u>را</u> ر د			**************************************	-		
Compute	ir ,	1 :			. 116 			Оре	eratlı	ng a	yateı	n - 3			

INFORMATICS (U.K.) LTD Ferrari House, College Roed Herrow, Middx HA1180/UK. Tel 863-0066 Telex: 9913495





### How Japan plans for an

again be a major factor in the world economy.

NIGEL LAURIE, a communications consultant with a special interest in computing, discussed with Ando how Japan is preparing today for the damands and opportunities of tomorrow. information society KAORU ANDO holds cleor threat. To protect its position in views on the vital role of the DP industry. It is "socially desirated by the control of the DP industry." It is the control of the DP industry industry in the control of the DP industry. It is the control of the DP industry industry industry in the control of the DP industry industry industry industry in the control of the DP industry industry

abie" in itself, it consumes few resources and does not pollute. But its chief benefits lie outside Itself, in the gains its applications and techologies will bring to other sectors.

For the economic future, he believes, belongs not to the capital intensive economies but to the knowledge intensiva ones.

Already, Japan's enpital intensive industries are under attack by competitors from the developing world. It is only n matter of time before developing countries acquire capital inten-sive facilities which, with low labour costs, will pose a major

says, develop a "knowledge based society" of knowledge

broadcaating, advertising, information processing, professional services and communication. These aell high added value goods and services and added value is recognised as the key to

To achieve thia, Japan has plans to develop into on information society exploiting information processing and communication technologies to the full.

Moreover, wille notional

what Ando calls the Japanese 'drive to improve" coupled with Examples include education, R & D, printing and publishing, the consensus approach to decision making. This means the run-up to a decision may be lengthy but Its Implementation In public life people under-stand the need for such a plan. Some 75 members of the Parlia-

ment take an active interest in the development of the Information processing industry and form a group which advises the government. They recognise that DP is a "key national Industry for the future" ond see

A mini computer

at microcomputer prices.

the whole economy into an information society.

For Instance, Ando notes, LSi changed the watch and camern Industry. But now "the LSI days are over and under develop-ment is a "super LSi which will give real help to the electronechanical industry.

Nonetheless, to make a national atrategy work demanda the right climate and a public which understands it and aupports it. Education and communication are very necessary. For "the public is near-sighted" and the skills shortage could be critical. By 1985, for instance, Japan will need 500,000 professionals in DP and other professions with a

ahortfall of 380,000 would occur.

The Japsnasa aconomic challenge has mada a msjor impact on the Wastern world. At Datafair 77 in London last month Kaoru Ando (picturad right) outlined Japan's plans to build an

information society whose parformance may

So how does Japan go about creating the right climate and educating tomorrow's users? The DP industry and profes

sion plays an important role. It defines its aocial responsibility education terms. Giving donations to projects unrelated to DP may be worthy but, soys Ando, it is "just not responding actually to social needs" of the kind the DP industry is equipped

The DP Industry responds to social needs through education. acknowledges a need to educate the whole community in DP. indeed "profitability and social responsibility are two wheels on which business must be riding." Business in future must reapond to social needs as well as to profit considerations if its purpose is to be understood by the public. Initiatives do come from the profession of industry but there is no co-ordinating group. "The atmosphere creates things.'

Here are some elements in the ways Japan educates tomor-

row's users:
To hulld public awareness there is a national information Week. Instituted by the government in 1972, this occurs in the first week of October each year. Conferences are held in major centres throughout Japan and are open to the public. Oversens speakers attend, films are shown and equipment is demonstrated. The public is able to use and become familiar with computers supplied by numu-

facturers. Ench year the conferences have a theme such as "muchines and human beings" and "computers and society." These distributed conferences keep the computing Iden before the people and are part of a long-term education and com-

munication pian.

Formal public education is also offered. The quasi-government brondcasting body NHK runs a basic programming course on its educational TV channel. By now it is "very well (nown" and anyone can take the course. "There's no need to enroli—juat switch on and buy a

low cost text lasued by NHK." The school system trains schoolchildren in DP by linking cumputer education to applications and the subject interests of ourse: DP in mathematics; DP In managerial information processing for commercial students, and scientific information proessing for technical studenta.

Educating the public is not only vital but time consuming. and it requires much advanced nvestment." However, "public interest is growing" though Ando would like to see more public discussion in the media. Now, he saya, "we have to teach he teachera."

One body which does so Is the: Fujitsu Institute of Computer Science which he founded over a decade ago. Tha institute is a professional training school open to the public and Intanded to be "a central powerhouse." it now turns out 400 to 500 "graduates" each year who include high school teachers, company employees and union leaders. As well as teaching, the nstitute develops materials for use in courses els where. To complement the institute.



KAORU ANDO II distingulated leader on the

reflected Ite Interestes outlook by thing econometrics at the thing of Indians. In the following wi he joined IBM, passing they the IBM Salar School with h Wetson Jur. Then he world; setting up IBM in Jean via he held the poets of draws education, parsonnel, marketing or well as much director. After 29 years with 6

company he left IBM is IR end, at government tiger helped build up Jign computing industry. He se appointed menaging distri-Fujited in 1970 and is so executive advisor. He is it president of the Fujiteu insize of Computer Science, a test of 1FIP and the Japen epresentative.
Ando's many other se

includa director o information Processing Sou of Jepan, member of Advisory Committee Computer Education at Computer Jopanese Ministry Education, end member of: Ministry of Labour Adm Committee on Employed Handicapped.

And o'e view of comp. reflects the convergent technologies. "Besicely f are three C's, he says, "ce technology, communicat. technology and computechnology". They should morged, he believes, to for core of the DP Industry's to:

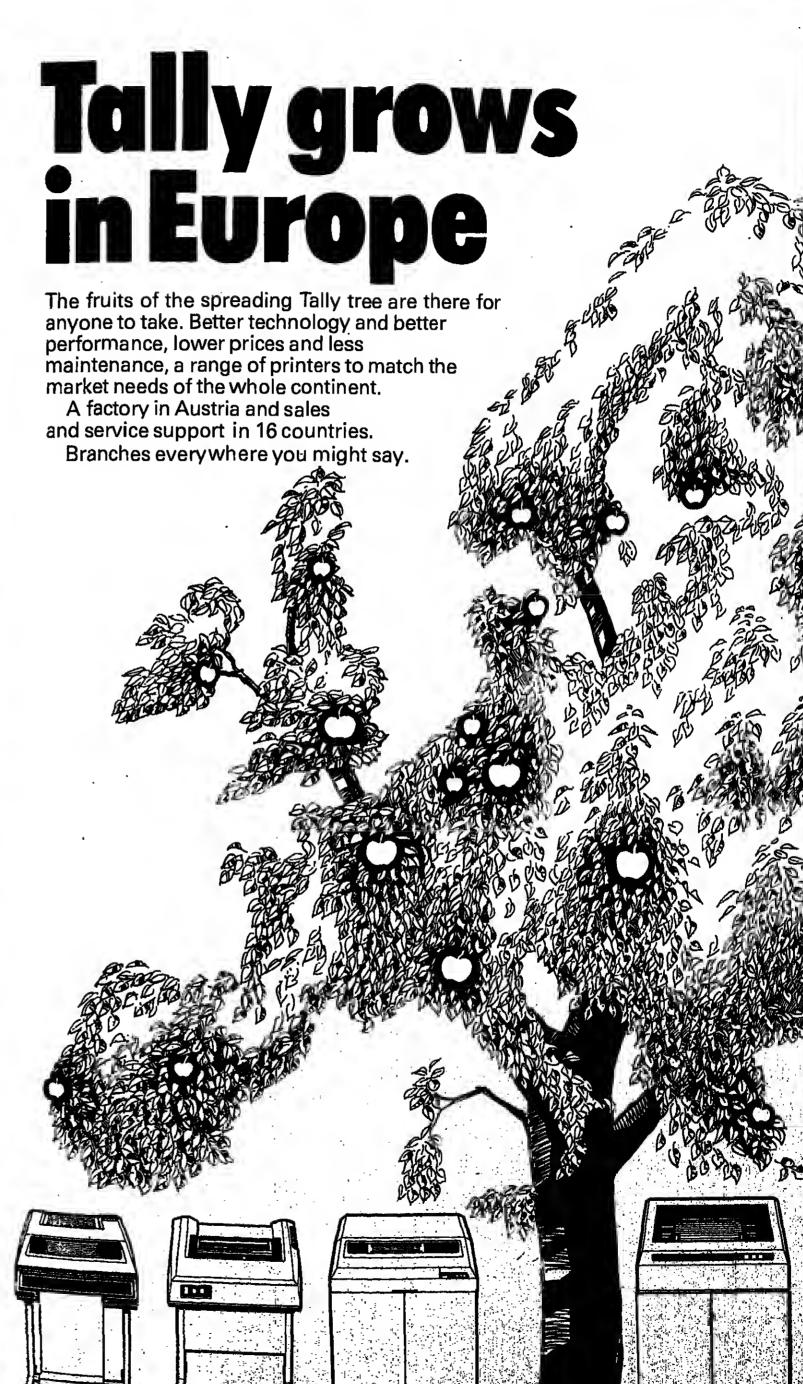
development. advises, is, he notes, a decompany.

Ando would like to see post-graduale Institution nformation science. Draw. graduates from all discipcould be an intentivit high grade centre. The produce a body of to qualified DP specialists to meet the critical future di

in Honolulu the Japa richn instutute of Manage Science provides "a pipek en Japan and the USA"! exchange of idaas. Am: there study the Japani doing business and his study the American 15 managing. "A dream" Europe" to encours

Information society plantiversion of the apole really don't know with information society plantiversion of the apole really don't know with the information society information society in the society in At Datafair, Ande information society is a all hope it will be a cres

benefit to society.
How the human birds respond to change saling predict. But Japan's spiral he expounded it has a saurance and a high predict outlook. Change he was a managed which is managed with the coulook. care. Experiments



A range of printers to satisfy all your computer output needs. Optimised technology at each speed

means optimised reliability, Simplicity of design means round-the clock performance - with no routine maintenance. Tally printers plug in to almost any mini

computer or data terminal. Tally service is direct and fastanywhere in Europe.

Tell us your application requirement: we'll tell you which printer will meet it.

Berkshire, England Telephone (0734) 580141

**TALLY Gesmbh** A-1232 Vienna

felephone: (0222) 672647

TALLY ITALIA S.r.I.

felophono: (O2) 4045546 TALLY S.a.r.l.

40 Rne des Vignobles 78400-Chatou Telephone: (O1) 913 5827

S.A.I.T. Electronics S.A. Telephone: (02) 3762030

Telephone: (90) 542 007

Doxiadis Brothers, Graphotechniki S.A. [clephone: (O1) 3226601

Holland Tracor Europa B.V.

Telephone: (020) 411865 Creative Systems Limited

Telephone: Malahida 45311 Norway Norsk Mamoni A.S Interhone (02) 670486

Equipamentos de Laboratorio, Ltfa.

Scotland Lortronic (Fife) Limited Dunferatine telephone. (0383) 823121

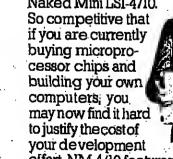
Teleptiona: (19) 976551

Spain Unitrosacs S.A. Telephonic (91) 242 52 02

Sweden Datametro A.B. Olofsgatan

TALLY

H



OEM market. The Naked Mini LSI-4/10.

a powerful instruction set,

up to 4K words of integral

memory and four I/O

computers, developed

specifically for the

nother Naked Mini

breakthrough from

ComputerAutomation.

Performance up again.

Price down again. A

channels - a complete computer on ONE board.

Integral I/O The four on-board I/O powerful 16-bit minicomputer channels are typical of the 'OEM features' Used half-card with Computer Automation's unique PicoProcessorx 15in), but controlled intelligent t a lower cables, interfacing costs once than can be cut by up to 50%.

> Compatibility Both hardware and softnew family ware for the new LSI-4

family of minicomputers are fully compatible, mers with complete range. If a program will run on the

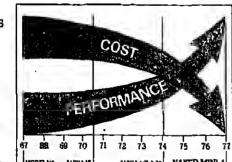
brothers **LSI-4/90**.

Reliability

effort NM-4/10 features a Every Naked Mini-4 minihigh speed processor with computer carries a full 12-month warranty. That'a how confident we are of their reliability. It's an

assurance you can build into your products.

Fast delivery An average of 30 days (yes, days) from date of order



with deliveries planned to providing OEM custo- a guaranteed schedule for major OEM customers. flexibility through the The combination of unbeatable price/performance, compact size and LSI-4/10, it will run a company totally dedicaon its bigger ted to supplying OEM computers make the NM-4 LSI-4/30 and ideal for YOUR application.



The CEM Computer People.

Naked Mini Division, CAI Limited (Computer Automation) Enropean Headquarters, Hentlord House, Demiens Way, Rickmans Worth v ) Hentlordshire, England Talephon, Stokesprovious (1923) Fron

COMMUNICATION TOTAL V. Mausanhar 2 1077

#### ITT processor for large networks

A FURTHER addition to ITT's range of communications systems and equipment has been announced by the company's German subaldiary, Standard Elektrik Lorenz.

The new hardware addition to the line is a third communications processor, 3809, which joins the 3805 and 3807, but offers further facilities for large networks. It has a capacity of up to 512 full-duplex lines, and main memory extends to one Megabyte. Eight multiplexed channels are also offered.

The processor has throughput of about 400,000 bytes per second, end can support peripherels through block-multiplex channels with a transfer rate of 1.5 Megabytes

Peripherals offered with the 3809 Include dlac drivea with

### Running a DP centre

an information service from supplament. The next two are related, in that one covers job monthly supplements.

planning, efficiency and communications with, and supervision of, staff.

The production management supplement deals with the mein meet the nceds of the organisation. Planning and scheduling work flow, input and output controls and the distribution of output are

Interfaces between tha end user and both the computer and Gardens, London NW4 21Q.

capacity up to 60 Megabytes, tape drives, card-reader and 600

or 900 lpm printers. A portfolio of software modules called Data Switching System is included in the announcement, running under a special Communications Operating System, COS.

Operating System, COS.

Modules Include Data Switch/Mcssage Control Program to interface the network to the host computer, Communications Access Method, which takes over this function from the host mainframe, Network Manager, and File Access Method.

ITT Business Systems says that the 3805 and 3807 already Introduced in the UK are likely to meet all user requirements fo the foreseeable future, but it is considering a 3809 for possible introduction in the long term.

ALL aspacts of running a the operations department are computer centre are covered in dealt with in the third

accounting and justifying the The first supplement daala operations budget while the with organisation and looks at other looks at auditing and measuring performance. The final supplement deals with mansgement functions

ranging from dasigning the computer centre to supplying time sharing services. The series of supplements is

called Auerbach Data Centre Operations, and costs £120 for a yesr. A 30-day free trial is offered. Further details can be had from Heyden snd Son. Spectrum House, Hillylew

URGENT ANNOUNCEMENT!

Stabilise your A.C. mains supply and overcome mains voltage reduction.

School of Economics, exemines the be held on August 6-9 next yeer.

Are time-lege in implementation of new problems of what he celle technology idees and technology, repaated failures end trenefer. Mr Lend is cheirmen of the UK differential growth and development in committee set up to help organise various countries paculier to the computer contributions to the Third Jeruselem industry? FRANK LAND, of the London Conference on Information Technology, to

### Factors in the transfer of technology

52-hour Greyhound bus ride to variation. the Cansdisn Rocky Mountains. This gave me a chance to try to new technologiea begin to be reflect on some of the massive volume of materisl we had received st the congress.

One particular thought kept recurring. Oespite the incredible rate of technological invention, and the prospect of sn even more rapid rate of progress in this direction, the computer industry revealed s series of Intriguing time-lags: the lag between an invention becoming known - for example, bubble memory - and its actual incorporation in a marketable product; the even greater lag between the availability of new cspabilities and the recognition and use of the capabilities in ndustry and commerce.

Even greater is the lag between the application of a new technology in one developed industrial country and the application of the same technology in s developing country. Even within a aingle country even one industry - the rate of

AT the end of the recent IFIP take-up of new ideas and Congress in Toronto, I took a technology ahows enormous

At the same time, once the used, they undergo the same kind of problems of introduction as those they replace.

Are the time-lags, the repeated failures, the differential growth and development rate peculisr to the computer industry, or do they apply to all technological developments?

Some organisations or countries can absorb new technologles, whereas othera fall to utilise them. Oversil we note an accelerated growth in technology in the 20th century, yet the progress made has been far from uniform. The accelerated pace of technological progress appeara to have made the rich richer and the poor poorer. Within the past decade people

have begun to be interested in the process by which technology Is transferred. A new area of attempts to look into the process by which technology transfer is initiated and implemented and which looks at the factors which inhibit or slow down the proceas. and the factors which ald or accelerate the process. Some previously accepted doctrines regarding the direction of developinent of technology have been challenged, for example, by Schumacher, who has demonstrated that a technology televant in one environment msy be totally irrelevant in a different

The systematisation of the study of technology transfer has enabled us to identify the three most important components in the transfer process:

1. The source — which has the knowledge and skill relating to the technology in question. The source may be the reaearch and development section of a large Industrial organisation, or may be s pure research establishment, or an academic institution, or an organisation which sells technology, such as a computer manufacturer or software house. Or the source may be a country which is utilising a

particular technology. 2. The target - which at present lacks the knowledge or skill to exploit the technology. division of the company with the R&O department, or may be a different branch of a multinational company, or may be a developing country.

3. The agent - responsible for transferring the knowledge and skill from the source to the

If we look at the process of transfer, mora closely, we can begin to identify the factors which act as constraints on the transfer of the technology. Some of the most important of these factors are:

Resources constraints - lack of capital and finance, isck of labour with the required skilla:

Infrastructure constraints lack of adequate communication facilities, lack of education and training facilities; Technical constraints — pro-

ducts engineered for a temperats climate may not operate efficiently in a tropical climete;
Cultural constraints — comprising attitudes from and

may directly inhibit certain not been recovered, if h k kinds of development or cause written off, we cannot replace conflict between the agent, with one set of cultural norms, and the target, which may have a different set of norms. (Consider the problem of bribes in different countries.) Thase differences organisations or at the level of countries. Does the relevant biting factors also suggest slowness of UK Industry to adopt UK inventions, as against the process of transfer and help the US or Japan, derive from to overcome some of the cultural constraints, resource constraints. The most important constrainta or a mixture of the tools are:

written off, we cannot replace h

Awareness of the constraints

in transferring technology from

source to target gives rise to the concept of "fit". The new

technology must fit into the

complex environment of the

target. Awareness of the init-

some of the tools which may all

Education and trsining: Ede-

continuous process through life

In terms of technology transfera

technique of particular valor

may be post-experience and

2. The availability of informa-

tion: Information plays a critical

Without Information the pre-

3. External agencles: There

are many agencies which fost

reseurch, cconomic develop

ment, and ultimately technolog-

transfer. These agencies rang-

from international bodies sur

us the World Bank, governmen

relief, and private or put. institutions such as merchan

binks and the stock exchange

The computer industry is c

particular Interest in the sloop

of technology transfer, it repre

sents a rapidly developing technology subject to all its

difficulties fuced by other ist

nolugics. At the same time.

provides some of the me

important tools yet developed

aid the process of technolis

the computer as a learning!

educational ald, via CAL

ncw and better method is

the dissemination and min-val of an almost unimit

Nevertheless, it is now

coming clear that it is only and

communication;

variety of reign

transfer:

offices providing grants or in

role in technology transfer

because it is now free.

Economic constreints — size cation has many aspects. It can the market and problems of be used to reinforce existing of the market and problems of

rale; barriers or be used to prepare to change. It is one of the principal change. level of literacy and numeracy. conditioning sgents affecting Again, this may be as significant attitudes towards technology a difference between a develop- nnd change. Education is not a ed and a developing country as one once-for-all operation pabetween two organisations within one country - one which has recruited its managerial with a background of higher education, perhaps from business scools, and the other mid-career and training course which has recruited its managerial staff with different educational qualifications;

Legal constraints - such as laws relating to privacy, to ccss cannot even start. pollution and to ways of doing business via company legisla-

Institutional constraints arising from the methods of operation of the country's institution. Included In this, for example, would be the codes of practice used by the accounting profession and the extent of burcaucrntic control and red

Political constraints - connected with the political system in operation, and factors such as nationulism, patriotism and the extent of government control;

Language constraints — which prevent the free communication of ideas and knowledge across political boundaries and, at times, within one country.

All these constraints ore in some ways interdependent. The legal and political constraints the computer as a designable are in some sense the result of Why, for example, does a

a new development which the computer as a databank appears to the cutaidar which appears to the outsider to make the product of that industry chenper and more reliable? The factors causing the rejection may be very complex, consisting economic elements. What factors give rise to the typical management Catch-22? If it is not written off, we cannot replace it because the costs have

lavour of the conference, committee have been est up in

#### Jerusalem Conference

to make strong contributes the event. The chalman of the National Committee if the Land, of the London School France, Land THE Third Jeruselem Conference on information Toohno-logy, to be held in Jerusalem on logy, to be held in Jerusalem on August 6-9, 1978, hes teken as its mein thama tha problems of technology transfer. The con-farenca will cover a wide range of topics on computing appli-cations and tachnology and Economica; In Franci Hebenstratt of the Ec Hebenstraft of the state of leave of Electriciti is national chairmen.

An interesting feeting the conference is a competite high schools, schools are minerally and the series of the conference of the schools. communication systems, with s spacial focus on the role of computers in the transfer of

computate († the transfer of technology, There will also be an international softwere and hardwere axhibition. Because of the international



A summary of maln naws itama which have appaarad ainca tha last issua of Computar Waakly Intarnational on Octobar 13

COMPUTER WEEKLY'S an-

Socicly's Specialist Group for the Dinsabled. The ball, held at London's Royal Lancaster Hote, was nitended by over 800 people

from the computer industry. (CW, October 20.)

MICROCOMPUTER systems

are ilkely to mske major inroads

into the OEM minicomputer

marketplace soon, according to

a report Issued hy the First

Boston Corporation, a New

York company of investment

bankers. (CW, October 20.)

### Royal opening for Swift funds transfer network

transfer network was declared October, by Prince Albert of three approved Swift Interface Device, SID, suppliers, revealed their plans for the next generation of hardware and software.

Rurmughs is to meet criticisins of the B7 SIO's throughput capacity hy rewriting the language of the B80-800-1800 compatible range of small

Grieral Automation has no plans for a second generation at present, but is completing a portfollo of banking software which will be avuilable to Swift and non-Swift nscrs. ICL intends to develop a new

medular SID combining ele-ments from both the 1500 and the 7502 terminal systems. NCR and EC arc also prepar-

ing Swift solutions. DEC is said to be working on a system to run nusler RSX-11. (CW, October

US MINIMAKER Microdata has completed negotiations to buy 75% of key-to-disc manufacturer CMC 11K for \$4 million, but has mbandoned plans to buy CMC Filince and CMC Germany. CMC UK has subsidiaries in Sweden and Denmark and Microdata will market through distributors for the rest of Finispe, ICW, October 20.)

A WORKSHOP funded by the EEC, almad at Improving tha treining of computar staff, is to be held in Munich or Dacamber 7-9. It is organised by the UK Institute of arsonnel Mansgamant and the National Coal Board's subaidiary Computar Power and is part of the second phase of a study into training started threa years ago.

Tha working language o ha workshop will be English nd furthar datalls can ba abiainsd from Melcolm ampball, Instituta of Personnal Managamant, eniral Housa, Uppar Woburn Placa, London WC1H OHX, tal: 01-387

INTERNATIONAL data flow and the protection of personal information arc now being dealt the White House of their plans tober 27.) to implement the Privac and a top member of the National Security Council has hern given the job of finding out how US interests might be affected by trans-border data flow and hy irgislation controlling it. (CW, October 20.)

A CHEAPER alternative to tobar 20.) from BASF in the form of a REPRESENTATIVES of top capacity and a innger average access time than the latest bubble memory chips, but at a Cust of \$20.\$8 per module (40.15 millicents per bit) it is considerably cheaper. (CW, October 27.)

Digital Computer Controls DCC-18 series. (CW, October

DELAYS of at least 15 months in the production of its large-scale 88/85 processor have led Honeywell to revise its plans for its isrge systems, which are currently under incrensed pressure from the 1BM 3030 series. The 86/85 is likely to he replaced by a more powerful processor in 1979, but in the meantime enhancements to the existing Level 66 and 68 (Multics) processors are expected very shortly. (CW, November 3.)

EXPORTS of UK computing services received a boost from the National Computing Centre following the decisions to give extra support to the 123 members in this sector and to appoint a services industry membership manager. The latter will act as a contact point for the software products scheme, for requests from overseas for training scrvices, and for the interlock programming services scheme, under which contractors develop systems in the UK to the specifications of an overseas custumer. (CW, November 3.)

LINDER the revised plun for restructuring the Swedish computer industry, Stansaab will effectively take over Datasaab. and the resulting company. Svenska Data, will be owned equally by Saab-Scanla and the State. The managing director-elect is Gunnar Wedell, et present head of Stansaab. The plan will be put before the Swedish Parliament shortly. (CW, November 3.)

OESIGN of the new Pasculbased language for the Swedish defence procurement agency, FMV, has been sub-contracted to UK consultancy SPL by L.M. Ericsson. FMV will use the language as its standard for real time software development. In September the US Department of Defence also decided to use Pascal for its Ironman project. (CW, October 27.)

RELEASE 5 of IBM's VM/370 operating system aays that VM/370 will be supported on the current models of the 3030 series (and, presumably, on future modela). Fears that IBM was seeking to push users of its new with at White House level in the large machines irrevocably to-US. All government depart- wards MVS have been allayed ments have been asked to tell by the new release. (CW, Oc-

THE fourth company to join the UK National Enterprise Board's Insac consortlum is Systema Designers Ltd, which has long had a close association with the government, handling in particular saveral projects for the Ministry of Defence: (CW, Oc-

domain tip memory module, the IBM management are scheduled to visit China very shortly. IBM mirruprocessor systems are seen as two big application areas. The module has a lower canacity and a lower canacity

THE UK government ownad Cable and Wireless Company is bidding \$18.3 million for Carterione Communications Corp of Dallas, Texas, celobrated for an anti-trust Swissiam SEN Electronique of launched as the Helvet-I. It is allowed to be attached to AT&T. launched as the Holvet-1. It is allowed to be attached to AT&T charpathlo with the 16-bit Data lines for the first time of William of the first time of William of the first time of the first t

control and monitoring system developed by the UK National Conl Board was shown at the Mining Machinery Exhibition in Birmingham. The system, Minos, is based on a Digital Equipment PDP-11/34 minicomputer, and its applications fall under two headings; envi-October 20.) ronmental monitoring, and con-

ry. (CW, November 3.) THE Wellesley, Massachusetts terminal systems manufacturer ncoterm is to be acquired by Honeywell under a complex share-swap formula. The acquisition raises interesting question products are built under (CW, October 27.)

one of the largest minority shareholders in ClI-Honeywell Bull. The acquisition would give CII-HB the means to make a more concerted effort in the European banking market. (CW,

THE first database processor to trol of transport of coal from the be offered by s mainframe face and of other vital machinemanufacturer is ICL's Csfs. Content-Addressable File Store. Oesigned to toke over the task of datnbase management, it consists of an srray of parallel processora linked to a disc subsystem and runs as a backend to a mainframe. An interesting feature is that the hardware searches the file by in France where incoterm content rother than address.

A 32-BIT minl has been introduced by Equipment. Called VAX-11/780. it comes with a new operating system named OS VAX/VMS and will support all PDP-11 peripherals as well as being able to run PDP-11 programs. Volume deliveries will begin in mld-1978, although first

THREE new 1100/80 and two new 90/80 models have been Introduced by Univac, ail

shipments could start carlier.

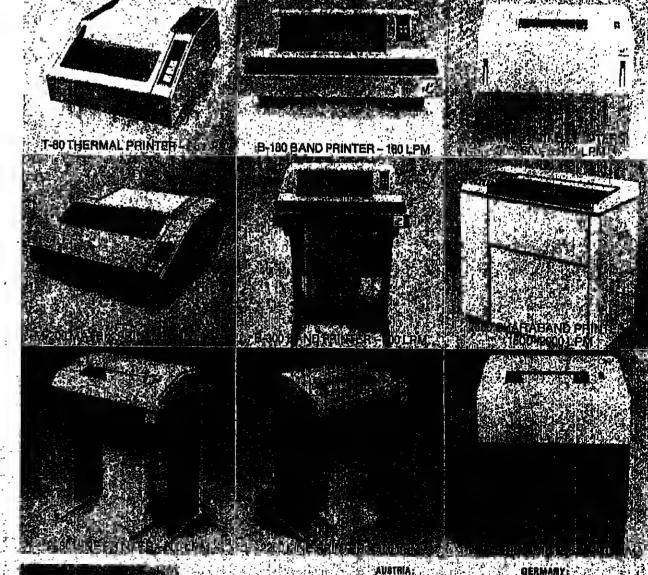
(CW, October 27.)

processor logic and 16K bit memory chips. New entry-level 1100/80 offers 70% of the power of the 1100/81, and better priceperformance than IBM's new 3031. (CW. October 27.)

THE Zilog Z-8 single-chip nicrocomputer ia scheduled to sppear in quantity in March. The eight-bit device has an onboard memory capacity of 2K bytes of ROM and 98 bytes of RAM, with 32 1/O lines. The 16-bit Z-8000 is planned to appear next June, its throughput capabilities and architecture will be similar to those of the PDP-11/70 mlni. with a Z-80 compatible (at asaembly language level) instruction set. (CW, October

A NEW subsidiary has been established in the Cniifornia centre of the US semiconductor industry (known popularly os Silicon Guich) by CAP, the UK consultancy. Known as CAP-CPP Inc and based in Palo Alto, the company will deal in CAP Microsoft products and services.

## PROBABLY THE GREATEST RANGE OF PRINTERS



UNITED KINODOM Dategroddots Info mai Ional Inc. "Scelling House", South Street. Reading: Berks, Rdf. 407, England. Tal: Reading 585723, Talex: 848227 AUSTRIA: Detaproducts Handelager, mbl Hinlers Zollamtzatiers 9/32. Tel: 78 34 52, Teles: 876669

FRANCE: Desuproducir lo

ri | 681034, Telex 418344

Childeroducke International Jing.
1, Aug des Fauf, Gentra 202.
24576 Mengie Codes, Frince.
24676 Mengie Codes, Frince.
24676 Mengie Codes, Frince.
24676 Mengie Codes, Frince.
2467 Mengie Codes, Frince.
2467 Mengie Codes, Frince.
2467 Mengie Codes, But C

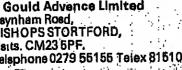
If you own, operets or rely on critical electronic equipment, drops In the maine electricity supply could cause serioue probleme, including · ipes of computer memory and errors. Gould Advance Constant Voltage Trensformars will provide e steble

if the meins supply drops es low Models are available from 75W to RW. The inite are essy to install.

voltage output, within ±1%, even

The Gould 2 year guarantee gives you syan further protection. mmediats delivery on most modele. Contect our sales office today -

Rsynham Rosd, RISHOPS STORTFORD. Haits, CM23 5PF. Telsphone 0279 55155 Telex 81510



-2 GOULD



#### Philips' software aids for US **early 1978**

DATA antry end preprocessing software aiready being sold on the Continent by Philips will be made available in the UK and the US early next year through its original developer, Four Phnse Systema.

The software adds capabilities to Four Phase Systems' iV/70 deta entry system, both in its local processing and mainframe communications modes.

New featurea include sequential access to index sequentioi filea, increased flexibility in local printing and spooling of print files, extension of the IV/70 programming enguage to include all common arithmetic functions, and the ability to execute batch functions concurrently from more than one terminel.

The IV/70 is soid by Philips in Europe as the X1150 series, and the software la known there aa Data X1150 Version 4.

#### Setback for **Fujitsu**

THE big breakthrough sought by Fujitsu in the Australian market may be a little delayed. The company was thought to be well ahead of the field for the estige Commonwealth Bureau of Census and StetlstIcs contract with a lerge-scale MI 90 mainframe to replace its CDC

But Camberra reports that the CBCS is rethinking its whole strategy and may decide to put out another tender on the basis of several smaller systems. Fujitsu is likely to remain in the

> danctivele the punch; Menual Mode-Cods transparant mode. Penel

### COMPUTER WEEKLY INTERNATIONAL

### Taking the heat out of the ops room

computers, much of the discussion at the recent National Science Foundationponsored research workshop in Atlanta, Georgia on directions of heat trenafe: in electronic equipment centred on computer

Of the 3B who took part in three days of presentations and discussion, nearly half wars from computer manufacturers — sis from IBM

elone.

Not surprisingly, the ISM "elr conditioning within frame" concapt was described as typifying the direction in which electronic circuit board cooling is moving.

Here, the primary heat removal medium that passes over the components themselvas is sir, but a flat compact air-to-water heat exchengar is intermed in the sir stream between each

is interposed in the sir stream between each row of boards so that all receive cooling air st

systems using novelties such as spray cooling, integral heat pipes and inert organic liquids, eli was considered as remaining the primary

coolent for 85% of computer applications.
Several ways in which more effective eir cooling has been obtained included splitting the circuit board at its high thermally conduct ing core and passing air through the ducting core and passing air through the duct formad; clamping both board edges directly to water-cooled flet-packe; using an olumine or, batter, a beryills hest exchanger attached directly to the base ceramic of LSI wafers.

However, with the use of air are associated

However, with the use of air are associated oblams of noise and effective air moving. All coolent flows, whether eir or water, give rise to fouling problems; also, with all systams, the problem of finding eccurate mathematical models and convenient computer programs for solving them remains. So do the problems of determining accurate values of contact ther-

Recommendations on areas for further research work included: investigation of the dependence, if any, of junction-to-base thormal realistence on the estarnal heat removal mode; development of an air moving device delivering 25 to 30 litree par second at 60-80 mm water gauge, driven et 4,000 revolutions per minute by a 150 wett motor; sepecte, auch per minute by a 150 wett motor; a specte, such as fouling and heat trensfer augmentation, of the final hast eschanger; optimisation and systematisation of axieting sir cooling technology at component level; flow characteristics and/or boiling characteristics and/or boiling characteristics at component level in liquid-filled sealed modulas; catalogulary and describing available programs.

The proceedings are to be published in the apring and will be evailable from Dr Win Aung, National Science Foundation, 1,800 G Street, Weshington, DC20550, USA.

## IBM price cuts threat to Japanese expansion

AN American report on the Japaneae computer industry following the launch of the IBM 3030 series questions whether the ambitious goals set for the induatry by the Ministry of International Trade and Industry can now be met.

The report, by Mort Shepetin. of New York stock brokers Dean Whitter and Co, says that the 3033 nnnouncement was a shock to the Japanese, in that their programme was geared to matching the advanced new hardware expected in IBM's

.sbandoned FS project. instead, the 3033 included no radicel new hardware; it concentrated on improving the efficiency and extending the system aoftware, an area in

which the Japaneae are weakest. Shepetin alao aays IBM'a aggressive pricing faced the Japeneae with e major headache, since their computer operations are already only marginally profitable.

Shepetin expects that IBM's price cutting policy for all 370 equipment sold in Japan will hit oenese manufacturers' share ol their home market. At present this is running at 57%, the highest it has ever been.

Government orders usually go

to Japanese firms but Shepetin believes that any loss of part of the privote aector market will make it difficult for them to expand their drive into foreign

He saya that MITI is disappointed in the resulta of the pairings of Fujitsu and Hitachi, and Toshlbe end Mitaubishi and Oki, which was imposed on these groups by the government. Fujitsu end

Hltachi in particular are atill competing head-to-head in the private sector. Equally they compete internationally, Fujitau through

Amdehl and Hltachi through The Japaneae government is therefore now conaldering removing all guidance end leaving market forces to decide which one or two of the aix

manufecturers has the stamina

He also believes that the Japanese objective of exporting 15% of output by the mid-1980s is now not on and that 1990 is the

soonest it could be achieved. The Japaneae manufacturers are meking brave noises ahout the 3030 series machines, reports the Japan Economic Journal. They are playing up the fact that the machine architecture is

almost the seme as System 370.



#### ICL replaces **IBM** system in Montreal

A CANADIAN local authority d for an ICL 2903 to replace its IBM system 3/10 rather than a comparable IBM

sophistication of systems design, its facility for enhancement, high storage capacity and the data communications and direct data entry features."

stock control and general ac- A WIDE-BAND coaxial cable modeme with rates from 50 bita will be linked to public cashlers' counters and ratea officea, via video terminals, for customer

Some 160 RPG II and 50 Direct Data Entry programe were converted to run oh the new system in two months with tha

The first 18M compatible Itel Advanced System to go live in Europe (pictured here) has been running since September 14 at Teleys, the service bureau subsidiery of the French banking organisation, Sociáté Générele. Teleys chose the AS/5 es a less taparates but equally nowerful expensive but equally powerful alternative to an IBM 370/158. It shares the Telsys computer suits with two older IBM systems, an IBM 370/145 and a 370/166 and a 370/188.

set up a centre to davelop new products, including bigger IBM compatible processors. The centre is at Palo Alto in the "Silicon Valley" eres just south of San Prancisco where itel has its hastburstern.

built in Japan for Ital by Hitachi end offered as a more powerful eltemative to the 3032 (CW, October 13). According to Ital, the other new ISM mechine, the 3031, atill

works out about 20% more expansive than the ADVI, with though it is much cheaper replacement for the 370/158. Next year AS/6 users will be able to field upgrade their mechines to the AS/5 7031 which will have

the AS/8 7031 which will have the 3031 hardware features not found on the 370/158, including a 32K byte cache buffer.

Ital has installed 34 AS systems to date worldwide, including three in Europe, and plens to install 200 machines in 1978, including 50 in Europe, ltell expects ten of these to be AS/6e and the reat to be AS/6e and the reat to be AS/6e and AS/4s. The AS/4 is a more assertion to the asystems and asystems as a second terms. The biggest itel computer at the moment is the AS/6. This is 370/148,

#### Videodata cable system has range of several miles

A WIDE-BAND coaxial cable data distribution system with ancillary interfaces for a broad spectrum of data, volce and video attachmants is being marketed exclusively in Europe by Ferranti. Devaloped by interfaces and dontrol modules, Czech organisations interfaces and dontrol modules, Savings Bank and supports frequency and state instrance both system offers a bandwidth range separately or both modes in the The first Slovakien or Called.

The other terminal for IBM and ICL mainframes FERRANT

LONDON

Derek Blakemore 01-261 8454

HOLLAND

ANALYST/

£10,000 plus

your curriculum vitae to:

**PROGRAMMERS** 

wast coaet of Hollend, and just 25 minutas from Amsterdam.

Due to the devalopment of a large naw system one of our clients raquires a

numbar of Analyst/Programmers. If you have 2/3 years' experience in

Cobol and an Online background prefarable on IBM equipment we're

The company is an international aubscription service based in Lisse near the

The system is currently running on a 370/135 using DOS/SHADOW 11/IDMS, but it will be upgraded leter this year to a 370/138 undar OS

with 1 Megabyte. If you have the required experience and feel that a move to

this English speaking installation in Holland would be of interest please send

Systems

Performance

Analyst
Wiltshire £6000-£7000

RENDECK NEDERLAND B.V.

or Telephone 010 31 20 461215

inception to completion and if necessary

to direct ad hoc study teams to this end.

You should have at least 2 years' experi-

ence in sizing and performance analysis,

modelling techniques, and an in-depth

Relocation expenses will be given

close familiarity with monitoring and

knowledge of 2900 hardware and

For further details please

contact Roger Terry at ICL

Bureau West, Horton Road,

Devizes, Wilts. SN10 21B.

50ftware architecture.

where appropriate.

A. J. ERNSTRAAT 157

AMSTERDAM

MANCHESTER

Owen Kelly 061-872 4211

#### Green light for Svenska Data

THE Swedish government he made "substantial concessor" in a bid to persuade Stansaatt join Datesaab in its propose national DP company, Sventu

Assuming that a Bill tableb the Swedish parliament of October 28 receives the Read Assent, the new company st come into being on January !

It will be based in Stockholm close to Stansaab's premiss. and the managing director is be Gunnar Wedell, the preser head of Stansaab.

The Saab-Scania process control division - basedr Jönköping and employing Lib people — and the compute system unit of the sylalic division based in Göteborg w not he included.

The two proposed elements of Svenska Data, Stansaab ac Datasnab, will be of comparate size. Datasaab has about la employees in Swedes and Stansaab about 1.200. The two will operate

separate divisions and the

Dutasnab division, based i

Linkoping, is to be headed be Hnrald Schröder, presently head of aircraft manufacturing "The internal structures of it-

new company have not yet bedecided," Wedell told Computer Weekiy.

"The merger will give ber Stansanb and Datasas ndditional resources in terms both capital and personnel It research and development and general experience of the nex company will be much strong with both teams working

Svenska Data will be owned equally by Saab-Scania and the Swedish government. It wittake in all the foreign Datas subsidiaries apart from Datasaab Systems inc in No York, which will remain a Sul-Scenia company. A US parter is being scupit for Dalssib Systems.

The capital of Svenska Dale will be SKr 360 million, [18] million. In addition Sast-Scanla will subscribe new capital totalling SKr 300 miles (£34 million) up to 1981; and loans to a maximum of SKr 70 million (£80 million) will be guaranteed.

#### Redifon wins Brno orders

for Seecheck key to disc stems were picked up in the choslovakia during September and October by Rediffor Conand October by Redion puters. There were the and most were signed a

### Appointments BRISTOL Alan Recon 021-356 4836

Alan Eacott 021-356 4638

Owen Kelly 061-672 4211

01-261 8174

MICHAEL WHITE 01-261 6028/6658

### Knight Contracts

#### **IBM Programmers** with OS JCL experience

COBOL for MANICHESTER, LONDON and EUROPE\* PL1 for LONDON and GENEVA BAL for LONDON

FORTRAN for UK and EUROPE

(\*Frenchlanguage useful). Pung our consultants RICHARD KALUZYNSKI or SUZY GILLAM to register your availability or to make an appointment on 01-491 4706.

#### **Operators**

it's time your earnings kept pace with your experience. As long as you've been operating for 2½ years or more, we can find you the contracts to boost your parnings and your experience. Take a look at our current requirements. You may find just what you've been looking for. ICL GIII OPS

OS OPS Honeywell GCOS OS OPS

For further details or advice on these and other contracts still in the pipeline call Sue Smyth, June Mogg or Jane Asbury on 01-491 470h.

### Recruitment

#### Systems Engineers (Trainee Analysis) Up to £6,000 pa-City

A tempting career move for an experienced programmer, educated to degree standard with plenty of ambition and drive. Our client is one of the major mainframe manufacturers and currently has vacancies available within its support group responsible for medium to large range machines. Essential personal attributes are enthusiasm and an ability to vort effectively with the users (including technical people).

Comprehensive training will be given and there will also be a certain amount of travel involved for which a current driving licence is required.

future prospects offer you the chance to move into DP. Management, Sales or an overseas appointment. Ref. JP/0062 London

#### **Operators** Telecommunications-North London £3,000 plus 30% Shift Allowance

Telecommunications Company with an excellent reputation as an employer needs two bright young operators with at least 12 months. Honeywell experience 60/60 6000 - preferably with knowledge of GCOS-10 work a three-shift system in a go-ahead OP department. Good benefits and excellent career prospects within this large international group.

Ref. AM/0059 London

#### Paris, North Africa, The World All yours as a Project Leader or Analyst

Programmer with £10,000+

After training in Paris you'll be off to North Africa to advise clients of a major international computer manufacturer. After that you could work anywhere in the world. A Project Leader and also Analyst Programmers are needed with at least two years' COBOL experience and preferably some ALGOL. You must be French-speaking and ideally have a back ground in banking Self-reliance, initiative and a willingness to live abroad are key requirements. Ref. 17/0027 Loadon

#### Interactive Systems and database

Up to £7,000 for Analyst/Programmers and Analysts in West London

International petro-chemical construction giant needs able, ambitious men and women, ideally technical graduates, with are many and varied, hardware includes IBM. Univac and pects include overseas travel. minis, prospects includ Ref. JP/0012 London

#### Operator Middlesex £3,400 plus £110 Bonus pa

Publishing Company with an IBM 370/135 operating under DOS/VS, GRASP and Power, needs an operation with at least 12 months' DOS operance to work a two-shift system. Benefits include free nicals, pleasant location and year by bonus. Ref. AM/0055 Leadon

#### Senior Systems Analyst £4,800 - Lelcester

Touve had around 3 to 5 years? COBOL or perience, from may have already handled projects on a large scale, tour diagost communicator with a sound commercial background, from think that it's high time only made your mest categorized e-curling spot. Took shock could be mountly lead positions

chance. They will also give you the opportunity of taking advantage of their reduced-rate mortgage scheme.

Ref. B/057 Birmingham

#### Around £4,500 - Lancs

c. £3,500-Milton Keynes

Our client's 1902A - soon changing to a 2904 - handles all the accounting systems you'd expect to find in a major manufacturing and distribution company. If you have a couple of years' COBOL experience - why not move into one of programming's most exciting areas and develop you caree, as well as you, experience?

Ref. B/065 Birmingham

4

#### Knight Computer Services Limited Staff Services Division of BOC Datasolve Group and a member of Computing Services Association.

For a better tomorrow, act today. To speed up your application or to get information on opportunities in the uture, send us the coupon.

Number of year sexperience in

Number of year sexperience in

Operating Programming

Analysis M/CR Lang

Salary required

Postupi required Parmaneoric Contract

Coving

#### **ROYTRON** plug-compatible punch RS-232C competible Inlanaco. Dealgned o uliliza ASCII definad control codas end operats with a terminal device on iho aama sarial data f)nas. Punch sccepie data al ell alsoderd baud rates up to 600 baud continuous of 4600 baud balched, villizing e 32 charactor buller. Two modes of operation are provided; Auto Mode —Simulates Model ASR 33 Telelype punch using ASCII dalined dete codes (DC 2 and DC 4) to activela/

awitches control sotivation/desclivation MODEL 1060-AS ot punch and associated teminet device. High speed compact, with soil contained electronics and power supply. Com-plete in attractive, noise

SWEDA INTERNATIONAL, INC. pie Avenue Prise Brook N J 07056/(2011 575-0100 ALLES SUE SYSTEMBOOK - FROOT . A LIGHT House, Fulley Way Cloyden Surrey Engles

The authority, Westmount. suburb of Montreal, received a bid from IBM in the form of a System 3/12. This was withdrawn and replaced by a The authority opted for the

The machine will run payroll, taxation, electricity billing

and handles teleprocessing for Teleys customers ell over France. Meanwhile, Itel in the US has

CONTRACTS worth 2000

#### We are looking for a person able to se work through in these areas from IEI. (U380) 4927, Plaace - quote ref. CW1572. International Computers think computers-think ICL

TheICL Support Team supporting a

mWilshire require an experienced

large and expanding Iwin 2980 installation

Systems Performance Analyst to collabor-

ale with the customer on a wide range of

Systematining and sizing activities. The main duties will insize the tuning systems offering mixed local temote batch, MAC and TP services.

• Insileing participation of management.

building performance measurement

use of analytic and simulation system

sizing luture workloads



PROGRAMMER

Required for the on-line development of data processing systems for the Admin-laterion. Superience of PLAN is neces-ery and training will be given in FILE-TAB and GEORGE 3 if regulred. The auccessful epideant will work closely with their departments in phesent auroundings on the University campus which is skuated about three miles from the sea.

Sciency to E4,800 p.s. with four weeks holiday plus an additional week at both thistonia and Easter.

systems developer and Our client, a leading Insurance Company can give you that

#### Systems Analysts

This major manufacturing company operates a highly sophisticated production control system. So the sort of analysts they need will have around 4 years' sound DP experience, ideally of on-line, real-time systems using ICL 1900 machines.

This is an excellent opportunity to gain more experience and ultimately lead your own projects. Friendly, relaxed working almosphere, easy travelling and good benefits.

Ref. B/054 Birmingham

#### Programmer New Systems-High Interest

All vacancies are open to both male and female applicants.



# Working with American Express says more about your future than any ordinary job ever can

Working with American Express says a for about you. It says you are a real professional and that you have a career with a bright future. It says you have a deeire to work with a company which has an anviable record of expension. Because of this expansion, American Express are now looking for the following people to contribute to their future success.

#### EUROPEAN SYSTEMS GROUP SENIOR SYSTEMS ANALYST

Balary: Circa £6,000 per ennum plus substantiel mortgage subsidy
Candidates will have at least 4 years' systems experience including multi-person
project control. During that time, you will have played a significant role in the
development of at least two major projects. These projects should have a financial
base and you should also have experience of the concepts of detabase, and, ideally
will have worked in a teleprocessing environment. You will have a strong belief in
your ability to develop afficient systems and will be able to convey this confidence to
more junior members within the department. Your ability to astablish a repport with
users will be one of your major assate, and you will get things done on time. Ref:
1928 CtW.

#### SYSTEMS ANALYST

Salery: Circe £5,000 per ennum plus substentiel mortgage aubeidy

You will have been working in a commercial financial environment for between 2 and 3 years and your philosophy and approach to systems development wifl be as positive as that displayed by applicants for the Sonior Systems Analyst position. You are probably now working in an environment which is not stretching your capabilities as much as it should, and are now fooking for a challenge which will prove to you one way or this other, whether you are any good. You will probably understand the concepts of delebase systems and be anxious to put into

practice some of your thoughts. Without any doubt, you will be embliqued and source to get things done quickly. At American Express you will be given that opportunity. You will learn a great deal over the next few years, not only how to develop computer systems, but also how systems can initiance business, and that is surely what systems enelysis is all about Rel. 1929 CW.

#### LEAD PROGRAMMER

Balary: circa £5,000 per annum plus substantial mortgags subsidy

A programmer is a programmer is a programmer, so they say, but this one is is different. Have you got a COBOL background with a good knowledge of Assembler in an DS environment? Then this position must interest you. American Express are developing some very interesting systems not only hare, but

elso elsewhere in Europe end they want to recruit a Lead Programmer who wilt essist and direct a number of more junior programmers in the development of new systems. One of the things that is particularly interesting about this position, is that with the development of these more sophisticated systems, and the introduction of new hardware both in the mainframe and mini sreas, you are going to wider your experience significantly during the next couple of years. You are stoogoing to provide strong technical leadership and sasistence to more junior mambers of steff, and this will equip you for a management role at a later data.

Too many companies regard their programming department as a group of 'coders' with no roal luture, that is one of the reasons why there is so much trustration in the programming area. American Express do not think like that. Here the opportunity cases wise a really significant. Ref. 1930 CW.

#### SYSTEMS PROGRAMMER

galaxy: eirca £8,000 per annum plus substantial mortgege aubaidy

The systems programming eres is one of the most immportant and often the most understand areas within a computate to within a computate to the most important it is and now wish to recruit someone to join a small team of systems programmers. You will have a thorough knowledge of IBM Assembler ideally in an

OS background, some knowledge of communications and an appraciation of time-ehering concepts, plus an intuitive approach to problem solving. The major responsibilities concern the "dateifed telloring" of software to American Express's requirements. This telloring will be besed on a continuing enelysis of applications systems and the advice of hardware and software suppliers. The systems programmer will be awere of new herdware and software evailable, and the selection of new products will, to a lerge extent, dapand on recommendations made by the systems programming group. You will be able to solve problems that occur in the software area and provide technical essistence to the application programmers. Rai

#### PROCEDURES SUPERVISOR

Salary: circa £6,000 per annum plus substantisi mortgage subsidy

Our client wishes to recruit someone to be totally responsible for procedures, releting to both new end existing clerical and computer systems. This person will be responsible for the control, development and training of procedures staff. You will be expected to establish and mainrain company standards of documentation for all derical and computer procedures. At the same time, establish a proper development and aducation programme for users and ensure there is complete familiarity with all

Close liaieon with the systems group and the Osta Processing Operations group is an essential feature of this job. The position requires someone who can communicate both in writing and verbally. Someone who can quickly iget to grips' with Antericon Express systems. You should have a strong commercial background and will probably now be working as a Project-Leader, either in an Organisation and

Mathods or Computer Systams dapart-

#### INTERNATIONAL SYSTEMS GROUP OPERATIONS PLANNER

The position will involve a considerable amount of trevel. Your responsibilities will cover many of the American Express International sites. With a strong operational background, you will be capable of essisting local staff at these international sites, with the detailed planning of the physical environment, assisting with recommendations for menpower planning and producing plans of future installation expansion. You will be able to agree these with local managements based on a proposal initially drawn up by yourcelf. You will be able to indicate whether a site chosen is accommically viable from the operations point of view, and generally prepare the ground for the amouth and efficient installation of the international Systems Group's service.

This position will involve significant travel, on occasion at short notice. The ebility to get on with users in many different national environments is vital. Ref. 1933 CW.

Almost all the positions advantised are new. They indicate the degree of expansion within American Express. The company is dynamic and the growth during the lest two years has been very impressive. The career opportunities are first clees. With the pisneed Company expansion, citaliange and reward both in financial terms and career development are probably second to none.

All the positions offer a mortgage subsidy and there is also an excellent noncontributory paraion scheme, a family medical scheme, a heavily subsidised centeers and a sports and social club.

You will see that there is an application form on the opposite page. We would like you to fill in the form and send it back to us as quickly as conclude. We will then be intouch with you by return to arrange a mutually convenient time to talk. We would like to meet you as quickly as possible. We look forward to hearing from you.



John Goldsmith (Computer Recruitment) Ltd., 15, Buckingham Palace Road, London, S.W.1.
Tel: 01-828 5356 - 24 hour answerphone service.

JOHN GOLDSMITH (Computer Recruitment) Ltd.



#### CONFIDENTIAL

JOHN GOLDSMITH (Computer Recruitment) 1.td

15 Buckinghem Pelace Road, London SW1 OPP Telephone: 01-B2B 5356

					Ref. No.							· · · · · · · · · · · · · · · · · · ·
Applica	nt	First namee			Experie	ence						
				one Number	Operations							
	Position	How Long For	Hardwa worked	are Syste I on	emis	Operst System	ing is used	Shift Systam workad				
				ation		1						
ssic Selery			Bane	tits								
				Merrisd / singls			L				<del></del>	
				es	Programming							
					Position How Long	Programming Lengueges	0 pa	rating tems use	, I	Herdw	are	Applications
						Longoogou	- 5,3	101112 000		4304		<del></del>
				relocate?		}	+-					<del></del>
•					<u> </u>	<b></b>	<del> </del>					<del></del>
tre you prepared	10 tienel dritting tue o	ourse or your w	orkr		·	<u> </u>	<u> </u>					
Education	on				Methods and	Procedures .						
Schools		From	To	Exeminetions paesed	Positions	Held	How L	ong?			Aejor Projects	
			<del> </del>		·				<b> </b>			
		<del></del>	<del> </del>	<del> </del>	·				<u> </u>		_	
			<del> </del>						<u></u>			
Universities/Fur	ther Education	From	То	Course taken and rosult	Systems Ans	lysts and Dasi	gn					·
					Project - Description	Type of Herdwe	na	Did Yo	u (lick w	ne <b>re epp</b> ili	eble)	No of Staff Controlfod
			}				C	antrol	Design	Piporam	Implement	
							<del>-   '</del>	rojsct				
			<del> </del>		- 					<del></del>	<del> </del>	
Other qualification	10a	Prolessic	nel societie							<u> </u>		
Ralavent courses		( Totalia			-	1	- 1			<u> </u>	1	
					Menegarie!/	<b>Suparvisory</b>						
Employ	ment				Position Ha	ld	How Los	ng	· M	ejor Proje	cts Numi	ber of Steff Controlla
From To	Name and Address of Employer	IS	Finel Selery	Position, responsibilities and reason for leaving								
					·							
}	1	}			_ <del></del>							
	<del>                                     </del>				·	 :!						
					Techn	iicai	l a a *	las Lat		oro oreole	e detaile in 'Ad	iditional information
	<del> </del>			<del> </del>					w, with m gement	ore brecia	Commun	iditional information
					Operating S	y atomia	T. 90	MP SOMP	#=1/1=clf	þ	CICS	F
-	<del> </del>		<del></del>	<del> </del>	BM OS		CL CL	ASS			MATB	
					- IBM MYT IBM VS1		E PH	IS			DRIVER ( DRIVER ( TASK MA	1900) SYS4)
		·		<del> </del>	IBM VS2		_	STAL		L	TASK MA	SYS4) STER
	ADD	ITIONAL	L INFO	RMATION	ICL GEORGE	2	- N	MMS :	•		TAGN	
Places prov	ide dateils of last two	positions and m	nora precisa	details of technical experience.	ICL GEORGE ICL GEORGE SYS 4 J LEV	4	- F0	ORTE OMS		ر کیش	FIND II	
Witness 900)	tional sheete es naces	sery.			- EXEC 8		F 0	THER	· / /		H MARKIN	
			(		GCOS GCOS OS 2000		H		:	en producti Production	CANDE	
				and the second second	OTHER	IS MCP				1.15	OTHER	
			5.7									in the second

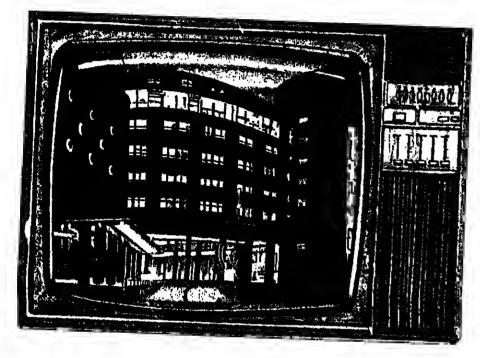


John Goldsmith (Computer Recruitment) Ltd., 15, Buckingham Palage Road, London, S.W.1 Tel: 01-828 5356-24 hour answerphone service:

JOHN GOLDSMITH (Computer Recruitment) Ltd.

### SYSTEMS ANALYSTS & PROGRAMMERS

### Come to an Open Evening at Television Centre on Tuesday, 15th November between 6pm-7pm.



The BBC would like to invite business orientated Systems Analysts, and also Programmers, to an Open Evening on Tuesday, 15th November between 6pm-7pm. Meet us ot Television Centre, Wood Lone, Shepherds Bush (opposite White City Central Line Stotion).

The purpose of the visit is to explain the rale of computers in Broodcasting today, and includes a brief tour of Television Centre. Our opplication oreas include aids to Production ond Transmission Planning, Management Information Systems, and Financial and Stock Control Systems. We think you'll find the visit extremely interesting,

particularly if you're a Systems Analyst concerned about solving user problems, with 3/5 years experience; or o Programmer with 2/3 years experience with ICL equipment and writing COBOL programs in o business

And we hope you'll find our solory scales equally interesting: Analysts (£5050/£6000); Analyst Programmers (£4575/£5400); Programmers (£3625/£4950).

If you can't come along, write or telephone, Appointments Dapt., BBC, London W1A 1AA, quoting reference no. 77.G.1572.CW... Tel. 01-580 4468 Ext. 2292



### Senior Programmer/Analyst

. . . to join our Computer Capartment which provides a service to all refinery administration and technical departments.

Applicante should prelarably have an education to GCE 'A' is val with at least 5 years' programming and systems snalysis experience. Languages used are COSOL, FORTRAN and PLAN.

Our equipment consists of an ICL 2904 configuration plus a DCT 132 terminal linked to computer iscillities at other BP centres in the UK.

Kent Refinary is part of the BP Group and this position could lead to further career dayelopment opportunities withtin 6P. Salaries and benalits are compatitive and there is a non-contributory parision schema. Write or telephone for an application form, quoting rel. CW 1, to:

M. J. Conway, Personnel Officer, BP Oil Kent Refinery Limited, lale of Grain, Rochester, Kent, MES OAG, Tel: Medway 272044, ext.

PERTH AND KINROSS DISTRICT COUNCIL

#### Systems Analyst/ **Programmer**

The Dietrict Council ere considering the eppointment of e Systems Anelyst/Programmer in the Finence Depertment in

Salary scele AP III £3474-£3825 (plus Phesa 1 end 2 supplements of £501-£519). Local government hours end conditions of eervice will apply. Housing needs will be considered in appropriata ceses.

Application forms and further particulars are obtainable from the Chiaf Executive, Council Chembers, 3 High Street, Perth Closing date for receipt of completed applications is Eriday. 26th November, 1977 

#### SOFTWARE TECH. INSTRUCTOR

#### SENIOR SYSTEMS ANALYST

#### **DEPUTY TEAM LEADER**

#### ANALYST/PROGRAMMER

### AMES

### **Systems** Manager

c. £7,000 p.a.

of quality electrical goods. We are poised to underlied long-term project to streamline our conventional/computer raiotad systems to bring about a coherent and flexitis organisation to meet luture market demands. Recently is IBM Systams 3, Model 15 has been installed.

To lead these changes we are looking for a systems delo epecialist with a prolessional approach to organistical change who will raport to the Finencial Director.

Success will be measured in terms of precise plants control and implementation, utilizing outside software lacilities and an understanding of the resides of maximing the contribution of systems within a medium shed con

An assistant is elso required to provide detailed program ming support to these activities.

The positions cerry excollent remuneration peckages who will rellect the envisaged contribution of the wexasts

To discuss your carear aspirations, please telephon The Personnel Managar, Grundig Internations Limited, Newlands Park, Sydenhem, London, S.E.M. Tal: 01-659 2466.



### Junior Dos/VS **Systems**

Morgan Guaranty, one of the world's leading banks of its IBM 370 compilers in its new offices in Stratige.

This position will involve working in the Compile.

Technical Support group and being transaction and the compilers on the left and the compilers.

on the job in all aspects of systems programming.

The Computer department is currently involved to reason automation exercise with the resulting systems batch and on-line, being implemented in phases of the part from the programming implemented in phases of the part from the part

next few years

The successful applicant will have at least incomprogramming experience on IBM 360/370 motivation one or more years Assembler Language propagation of all of the bank's systems currently being present and using CICS/VS for its on-line systems.

The bank pays particular attention to take and provides both inhouse and external framingular.

A competitive salary will be paid released to the position and in addition there are attended which include annual bonus, low cost more and external framingular which include annual bonus, low cost more application. Please write to: Mr. R. F. Eightaint Parsonner.

Morgan Guaranty Trust Company of New 2013.

### Morgan Guaran

### A NATIONAL BANK in THE MIDDLE EAST

#### High rewards + Career development

OUR CLIENT is a major bank with many international connections, which undertakes highly diverse activities within the banking field. They have investigated the need for computerisation in a very thorough and professional way, and will take phased delivery of two NCR Criterion mainframes during the next 12 months, plus further systems later. The bank now requires high-calibre professionals to fill the key positions described below.

ENVIRONMENT. The climate is not, but air conditioning is standard. Social facilities are limited but developing rapidly within an economy experiencing an enormous rate of expansion. There is ample scope for adaptable individuals to enjoy an active social life.

ACCOMMO OATION. Fully furnished modern flats with free utilities are provided for employees and their families

CHILDREN. Generous schooling allowances are given, but local education beyond the age of II years is problematical. Except for the most senior position on applicant with more than 2 children is likely to be at a disadvantage, unless he is prepared to leave his family in the U.K. Return holidey fares are paid for the whole family. Should his family remain in the U.K., the cost of additional periodic visits to them will be paid.

MEOICAL TREATMENT. Medical facilities are good and there is free private treatment for the employee and genarous provision for his family.

CONTRACT OR PERMANENT. Recruits may take contracts or join as permanent employees

TRAINING. Appropriate training will be provided.

#### D.P. MANAGER to £20,000 p.a. TAX-FREE

+ FURNISHEO MOOERN FLAT + CAR

+ OTHER MAJOR BENEFITS

RESPONSIBILITIES: All computer facilities and related activities.

CANOIOATE PROFILE:

1) Will almost certainly have good knowledge of banking systems.

Must have good experience of computer systems development and OP management within a sizeable mainframe installation.

3) Will be capable of achieving results through people.
4) Age probably 30 to 45.

CW/917/M

#### **SENIOR ANALYSTS** to £12,500 p.a. TAX-FREE

+ FURNISHEO MOOERN FLAT + CAR or assistance

+ OTHER MAJOR BENEFITS

RESPONSIBILITIES: All aspects of systems investigation; analysis, design and

CANOIOATE PROFILE:

Minimum of 6 years' O.P. experience, including programming and all aspects of systems development and implementation using mainframe computers.
 Knowledge of banking systems.

3) Age probably 24 to 40.

#### **OPERATIONS MANAGERS** to £11,250 p.a. TAX-FREE

+ FURNISHED MODERN FLAT + CAR or assistance

+ OTHER MAJOR BENEFITS

RESPONSIBILITIES: All aspects of a mainframe computar and its operation.

CANOIOATE PROFILE:

At least 6 years' experience of computer operations within mainframe installations, ideally including an NCR 8550 or 8250.
 At least 2 years as an Operations Manager.

3) Age probably 23 to 36.

CW/917/0

#### SENIOR PROGRAMMER to £11,250 p.a. TAX-FREE

+ FURNISHEO MOOERN FLAT + MAJOR BENEFITS

RESPONSIBILITIES: Leading programming team plus participating in

CANDIOATE PRODFILE:

1) At least 4 years' programming experience including good COBOL. Experience of NEAT/3 would be an adventage.
2) Experience of leading e team or demonstrable ability to do so.
3) Age probably 23 to 38.

#### **COBOL PROGRAMMERS** to £10,000 p.a. TAX-FREE

+ FURNISHEO MOOERN FLAT + MAJOR BENEFITS

RESPONSIBILITIES: All aspects of the writing and testing of programs,

1) At least 3 years' programming experience including good COBOL. Experience of Age probably 20-30.

CW/917/R

- \* THE POSITIONS DESCRIBED ABOVE OFFER THE OPPORTUNITY NOT ONLY TO MAKE CONSIDERABLE SAVINGS BUT ALSO TO ENJOY CAREER
- \* PLEASE TELEPHONE OR SEND A C.V. WITHOUT DELAY AS THE TIMESCALE OF THE RECRUITMENT ASSIGNMENT IS VERY SHORT.



DPSC Group Limited, Crown House, Morden Surrey, SM4 5EU. Telephone, 01-540 8311

International Recruitment and Search Consultants to the Computer Industry.





#### IF YOU HAVE THOUGHT OF MIGRATING TO AUSTRALIA, CONSIDER THE FOLLOWING.

CONTROL DATA AUSTRALIA has a solid record of achievement in the marketing of systema in the ereas of education, scientific, wagering, government and menufacturing. In recent years, the Company has consistently achieved or exceeded all of its established sales targets. In addition. Control Data has its own Australien manufacturing facility. operates one of the country's lergest and most comprahensive service bureaus, and is a leader in the marketing of advanced education and

CONTROL DATA AUSTRALIA requires people with expertise to work in the above mentionad areas. Vacancies exist in Malbourne and Sydnay, end occasionally in Perth, Adelaide, Cenberra end Brisbana. We do not intend recruiting in the United Kingdom in the neer future but if you are thinking of migrating to Australia why not contact us for further information about our employment opportunities.

- CONTROL DATA AUSTRALIA seeks experienced

  Commercial Analyst/Programmers (Cobol experience a must)
- On Line Real Time Network Programmers
- Pre Sales Analysts
- Systems Programmers
- Proven Systems and Bureau Seleamen

 Cuetomer Engineers (CDC, IBM or ICL System 4 experience preferable) CONTROL DATA AUSTRALIA offers successful epolicants en excellent

selary peckage with includes Company car or cer allowence, superennuetion, 4 weeks annuel leave with e 17.5% leeve loading. excellent working conditione end cereer opportunities.

If you ere interested in epplying for a position with CONTROL DATA AUSTRALIA please send your resume, including location preference in Australia, address and contect telephone number in U.K. to

Mies Sandra Beasley Manager, Recrultment and Selection



### CONTROL DATA AUSTRALIA PTY. LIMITED 598 St. Kilda Road Melhourne 2004 Telephone (20) 54 2004

598 St. Kilda Road, Melbourne, 3004. Telephone: (03) 51 0351.

DATA

#### **ANALYST/PROGRAMMERS**

Crawley, Sussex.

Up to £5000 p.a.

expanses where appropriete.

Please write, with full C.V. to:-

\* These positions will provide ample opportunity

for career development in a progressive company.

\* Our conditions of employment era those you

would expect from a multi-national organisation

and we are prepared to assist towerds re-location

G. M. Smith, Personnal Menager, Crewley ortalephone (CRAWLEY 26041) for an

\* Mallory Batteries manufacture and merket the high parformence 'Duracall' renga of batteries

\* The growth in our European markets hes resulted in an expansion of the dete processing operations. Oevalopment of new and existing systems, on-line facilities end distributed processing is planned for the current five IBM System 3 machines end new hardwere instelled

\* Cendidates should have et least two years experience in either CO 90Lor RPG II end e

To discuss the job requirements in more deteil pleese telephone 80 9 PHILLIPS in our Oata Processing Department. thinking ettituda to programming.

MALLORY BATTERIES LIMITED, Gatwick Road Crawley, West Suseex RH10 2PA

MALLORY DURACELL®

#### SENIOR PROGRAMMER/ **ANALYST**

A vacancy exleta in our Date Processing Department for an experienced Progremmer to essist in the maintenance and development of commercial systems. The Company operates

Applicanie should be at lesst 25 years ol sge, have 3 ts 4 years commercial data processing experience -- preferebly using RPG II and be of a mature personelity enabling them to funicate with people at all levels

3-

The Company is highly successful in its field of operations which antalis the manufacture and supply of Educational Stationery and Teaching Aids. An attractive salary is offered for the post and the Company operates a stall restaurant and Sports and Social Club.

Applications, stating aga end experience to data should be addressed to:

General Manager Philip & Tacey Limited North Way, Andover, Hants Tel. Andover 61171 (0284)

#### SYSTEMS **PROGRAMMERS**

Chertered On-line Limited, Hong Kong's lergest computer service organisation, requires edditional specialists to meet the demands of its expanding

(1) Univec 1106 Systams Programmar with et laast 3

yeare EXEC 8 experience.

(2) Minicomputer Systems Programmer / Assembler.
Programmer preferably with PDP, 11 or Date general

These appointments provide en ettractive remuneration package including travel and housing allowances. mum income tax is 15 per cent of salery. Write with full datails by 24th November, to the Technical Menager, Chartered On-line Ltd., Asian House, Hennessy Rosd, Hong Kong, Interviews in England early December.

#### INTERDATA

Further expansion of the European Software Development Group has created new opportunities.

### **Systems** Support **Programmer**

Up to £5,000

A SYSTEMS SUPPORT PROGRAMMER is required to support Operating Systems, Systems Softwere and Utilities used by the group. Design and implementation of utilities for users and operations stalf, lieison with users within the group and with interdete personnet in the United States will form important components of the job. In addition the eyetems support programmer will ect as Systems Software Librarian lor

Candidates will have 1-2 years' programming experience, praferably in assambler and should have experience of this type of work.

This appointment offers unlimited cereer potential to individuels with the necessery background, exparience and qualities.

Salary will be commensure to with obilities and experiance and will range

If you ere interested, cell or write to PAUL JARDINE.

INTERDATA LIMITED 227 Bath Road Slough SL1 4AX Telephone Slough 34511

### Computer Operator \

Honeywell 62/40

Salary £3,250

We are in the process of relocating our headquarters, including the computer installation, to pleasant surroundings in Wiltshira.

We are taking delivery of a new Honeywell 62/40 and have a vacancy for an operator with a minimum of two years experience on small to medium sized computars in e multi-programming environment.

The successful applicant will be given every opportunity to develop their

Benefits include single day shift working and generous relocation axpenses in appropriate cases.

For an application form please write or telephone:



Meara Bros Holdinga Ltd. 154/158 Sydanham Road London SE26 5LA Tel: 01-778 7851

### Assembler Programmers

Information systems customer support

London based

NCR offers rare opportunities for rogremmers to step up the computer ledder, using their current Assembler experience

These ere get-up-and-go positions. taking you out of the rut and into tha customer anvironment. You would guide their operating stell in the implementation of Computer Output Microfiche (COM) on NCR Recorder/ Processors Series 110/115.

Our eoftware peckages support the most advenced businees recorders in the world - enother outstanding . example of NCR's growing dominence in the computer lield. Already; over-100 users in the U.K. with large up-todete installations have edopted our-COM systems. As our COM systems are used on all major menulecturers equipment you will iteve the cherics to broaden yout equipment knowledge.

You can see why sound Assembler

experience is essential — whether a mejor manufecturers equipment, son the positions will however necessitate 10 M Aseambler under OS or DOS good JCL knowledge:

Give us this and we if the very attractive salary, full expenses as worthwhile big Company benefit peokage. Plus realistic category development into analysis fully accustomer support services of average it depends on your ambilities.

it couldn's be a believeline to ble our multi-neflonal sellvil y to walk edvoncing rapidly in all hardware and continuous areas - so in appoint the get the facts: Or write giving the datale quoting fall (CW/1) of the continuous and the continuous areas are so in a service and the continuous areas are so in a service and the continuous areas are so in a service and the continuous areas are so in a service and the continuous areas are so in a service and the continuous areas are so in a service and the continuous areas are so in a service and the continuous areas are so in a service and the continuous areas are so in a service areas areas are so in a service areas areas areas are so in a service areas areas areas are so in a service areas areas are so in a service areas areas are so in a service areas areas area Geoff Hodder Rec

Officer, NCR Limited. 206 Merylebona Road NW1 6LY. Tel. 729 707

#### Terminal Networks and Distributed Processing North Midlands **Home Counties** Consultants. Analysts. Programmers And Demonstrators Salaries £3,500 to £6,500

New devalopment within the support group of this well respected merketing organisation have resulted in several genuine career openings being created. The seamings packages are generous and the structurad career development plans makes promotion a real possibility — depending on YOUR efforts. Sevaral new products have been recantly introduced and you will be involved in either developing packages and/or implementing and supporting new sites. You will be taking part in e concerted team effort to establish a solid customer base and will be working in e fest moving, challenging environment.

Quatttlae required:

Demonstrators

You will heve the ability to impert technical information to inexperienced personnal - either informalty, or in "classroom" situations. You must have a flexible attitude and eny experience of terminals or direct data entry devices, and/or product demonstrating will be of perticular interest. All necessary training will be provided.

Analysts

You will be able to carry out pre-post seles support duties and rapresent the company's interests to its clients in addition to possessing the qualities mentioned above. You will have a programming background and have completed at least one systems project — any involvement in data communications or specialised

*Programmers* 

You must be mobile, eelf disciplined and kean to succeed. You must have geined e minimum of 2 years' programming experience in COSOL, RPGII or ASSEMBLER. Any prior knowledge of terminale, key to disc or dietributed procassing systems will be most useful. Full product training will of course be provided on commancament.

Consultant

At present you will have control of a team of programmere and analysts, you should have hed at leest 5 years' experience of analysis and be capable of handling multi-project situations. You will have e fleir for organising and motivating your staff applications such as reteil/dietribution, banking, insurence or engineering make you and will have specialised knowledge of one or more of the applicationa areas

If you wish to benefit from the growth of this already established compeny, then telaphone our Manchester office now, quoting reference: CW64-7M. Interviewe can

01-686 9693 (24 HOUR ANSAPHONE) | 061 236 2419 FAULKNER HOUSE, 19, PARK STREET, CROYDON, CR9 ITN FAULKNER STREET, MANCHESTER, M1 4YD



CAPP ASSOCIATES 50 Computing Services Services Association



### SOUTH WEST THAMES REGIONAL HEALTH AUTHORITY

Ever felt that you would like to put your hard-earned professional skills to really satisfying use? Job satisfaction is not easy to find, but we believe that you will find it with The

Analysis are closely involved with user training, incorporating the latest multi-medie techniques

INTERMEDIATE PROGRAMMERS £4408-£5218

Applications are invited from programmers with et least 3 years' experience together with e thorough

This is no back seat job! We are looking for anthusiastic, talented professionals who will lead,

knowledge of ICL 1900 COBOL (Georga 3 training will be given where nacessary).

Successful candidatee will enjoy some systems involvement and

will be responsible for ell espects of development end testing.

They will also be expected to contribute to the design of files:

and assist in the supervision of more juntor programmers.

use? Job satisfaction is not easy to find, but we believe the South West Thames Regional Health Authority. You will also find excellent salaries, with guaranteed annual incroments, and job security; and the expanding role of computers within the Health Service ensures considerable

potential for DP professionals. The Authority needs you to help provide

Required to join a small team of professionels

The Authority's ambitious plans include the

capture and the provision of menagement

iaison as well as contact with other Health

Authority Computer Centres nationally.

levelop ment of several large real-time and batch

systems for a wide variety of applications including

budgetry control, patient monitoring, remote data

Successful candidates will enjoy a high level of user

£4408-£5857

ackling real problems.

rmation to hospitals

SYSTEMS ANALYSTS

medical, financial and management information services to the 150 hospitals in a region looking after 3 million people. The purpose built computer centre, situated in London, SW17, houses a new ICL 1903T

running under George 3, with MOP. The SWTRHA intends to remain at the forefront of technical development with OMR, microfiche, communications, database techniques and structured programming techniques currently under evaluation, If you want a little more purpose in life and to enjoy your work in

a modern, progressive environment, 'phone now for an informal discussion of the following opportunities.



#### **COMPUTER OPERATORS** SINGLE SHIFT

The essential requirements for these excellent, ground-floor opportuntties a an ICL 1900 background coupled with e sound knowledge of George 3.

The combination of small project teams, structured programming, on-line program development, olosely controlled standards and quiet, pleasant, offices provides the ideal climate for high productivity end a quality of experience to be gained in few other, establishments.

> Telephone me, Les King, up to 8,00 p.m. each evening. or write, enclosing brief career details to: Modern Computer Services Limited, FREEPOST, London SW11 68R Telephone, 01-228 2283

consultants in Data Processing

#### Edmund Howard's Client Album

#### SENIOR **PROGRAMMER**

LONDON, SW1

A highly specialised consultancy is currently seeking an experienced somer programmer to assume total responsibility for the company's commercial programming activities.

The successful candidate should possess a sound knowledge of Cobal coupled with in-dopth experience of the IGM DOS Oporating System. An ability to deal with personnel at all levels is essential. Additional duties will include providing technical support to the operations team to ensure that objectives are mot within the

This is a key position for someone with the right qualities whose background combines both skill and professionsism. In keeping with the company's tine reputation for providing a good and difficent

#### **REAL-TIME AVIONICS COMMUNICATION SYSTEMS**

U.K. AND **EUROPE** 

The Avionics Aerospace industry is one of the most progressive areas of Data Processing. New technological davelopments within the industry have created a need for specialist skills of a very high order. Computer professionsla (both hardware and software) with experience of Mini real-time communication systems, coupled with a working knowledge of Assembler and / or Fortran will find the chellenge of this competitive anvironment both refreshing and stimulating. Candidates should hold a degree or aquivalent and be willing to assume total reaponsibility at either Programmer, Anelyst/ Progremmar or Consultant leval. The selarias for these positions, although negotiable, will raflect the exparience and commitment of the individual. For further details please quota CW 161.

#### **SYSTEMS ANALYST**

SURREY SALARY c. £5500 p.a.

Wa are recruiting on behelf of a lerge independent public organisation who operate as financial, professional and commercial agent for oversees government and public authorities. SYSTEMS ANALYST. A systems analyst ie required for a team concarned with the design of a major naw system for order processing and secounting. Candidates should preferebly have at least 4 years' experience of programming and systems design including on-line systems and date base file structures. Knowledge of Honeywall IDS and TDS would be an edvantage. Starting salary will be negotiable up to £5,500.

For further details plaese quota CW 162.

#### **COMPUTER SCIENTISTS FOR BASIC** SOFTWARE DEVELOPMENT **WEST OF LONDON**

Salary up to £6,500

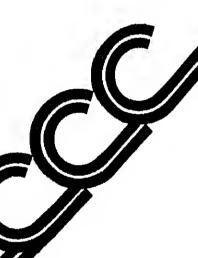
Further expansion and development within our client's European Softwere Development Group has craeted opportunities for Computer Scientists to be involved in the design and implementation of compilers, T.P. monitors and data beas systems. Candidates should possess systems software development expatience which will probably have been geined with a Computer Manufacturer or softwere house.

These appointments offer unlimited carear potential to individual with the necessary background, experience and qualities Santor candidates can expect to essume project leadership responsibility in the not too distent luture. For further details please quote CW 163.

#### Edmund Howard & Partners

Computer Personnel Consultants

5 Brighton Road, Surbtion, Surrey Telephone 01:399-9183. 38 Grafton Street, Dublin, Idlephone 775.756.



Kingston: 44 Wood Street, Kingston upon Thames, Surrey. Telephone OI-549 3212 (24hrs) Telex 27950

Dublin: Conberra House, 24 Lower Leeson Street, Dublin 2. Telephone 762170/762188/785692 Telex 30742

Amsterdam: Rivierstgete Amsteldlik 166 Amsterdom 1010.

Telephone 461844 Telex 11336

Computing Services Association

#### Holland

#### **IBM Cobol Programmers** Up to £9000 p.a.

This is an ideal opportunity for IBM COBOL programmers with a minimum of two years practical experience and good educational background to relocate to an ettractive

Our client, e very lerge commercial group, besed in The Hague is looking for young progremmers who wish to lurther their cereer in en expending environment. Attractive saleries will be offered to successful candidates and fringe benefits include four weeks holiday. non-contributory pension, company paid course, initial assistance with accommodation and special tex concessions.

Herdwere used is en IBM 370/125 with 256K bytee (to be upgraded to 384K bytes). The operating system le DOS/VS with SHADOW 11. Further expension plane involve en IBM 370/138 end the utilisation of structured programming techniques.

New projects include working on systeme for Equipment Plenning and Control, Financial Administration, Project Control, Cost-Estimetes etc. Other duties ere meintenenca of exleting systems and installation of packages.

London interviews will be conducted by our Holland representatives during the week commencing November

#### Change to **Distributive Processing Systems Software Engineer** c.£6000 **West London**

As technology has advanced, processing power and memory ere not only to be found in meinfremes, but elso in terminals, intelligent terminals. The philosophy of Distributive Processing le now very much e raelity end e fast growing merket. A worldwide company require a Systems Softwere Engineer to work In advising Ite network of distributors on the use of terminal processors and to solve the problems of distributive processing systems.

Computer Science degree end over two yeers experience et a beeic level on several different mechines.

The euccessful applicant will be given extensive training to echieve end meintain a high degree of femilierity with ths product. He/she will than be involved in Identifying and solving besic softwere end epplications problems. This job will leed to Systems Project Menager and some overseas treval may be involved,

If you are attracted to the forefront of tachnological development ring me, Stelle Mitchell, end I will advise

## TOMORROW'S

Our client is a U.S. based mini/midi computer manufacturer with an eye to the future. Their advanced technology makes them market leaders in their field - where they go, others follow. They have a substantial customer base in the manufacturing, industrial, scientific and technical sectors, and are now penetrating the commercial sector with equal success,

Their modern Headquarters in South Berkshire reflect their excellent company image.



#### **SALES — NORTH AND SOUTH TERRITORIES**

Base salaries circa £6,000 p.a. plus attractive incentive scheme with 80% of total earnings guaranteed, plus company car, plus profit sharing.

The company have vacancies for three sales people - two to establish new territories, which can be defined to suit the location of the successful candidates; based in the North. with support from a Manchester office.

The other to cover a Southern territory of a 50/70 mile radius of Central London.

#### **SALES — U.K. KEY ACCOUNTS**

Base salaries circa £6,000 p.a. plus attractive incentive scheme with 80% of total earnings guaranteed, plus company car, plus profit sharing.

Opportunities exist for two sales people to take responsibility for key named accounts in the U.K.

We are looking for successful MINI computer sales people with a proven track record to join a highly professional sales team, with excellent technical and engineering support.

Alternatively, if you are a relatively young Systems Analyst, presently working within a large company environment and have ambitions to expand your horizons, this could be your opportunity.

#### SALES SUPPORT ANALYSTS

Base salary £5,500 p.a.-£6,500 p.a. pius company car, plus profit sharing.

For these positions our clients require people with a sound knowledge of commercial computing and COBOL. You will have the opportunity to gain expertise in Data base Management Techniques, Distributed Systems and Operating Systems. Successful candidates would possibly be analysts who have progressed from a programming background, in either a mini or mainframe environment.

These Support Analysts will be available to offer technical support to both sales force, and the Company's extensive customer base.

These vacancies are at the Company's Headquarters near Wokingham.

#### STAFF ENGINEERS

Base salary £4,500 p.a.-£5,000 p.a. plus profit sharing.

Young Junior Programmers or University Graduates with an interest in sales are offered a 'once in a lifetime' opportunity to gain valuable training and experience. Initially you will be involved in demonstrating kit to customers, benchmarks, dealing with technical queries, and generally providing support internally to the sales force.

These vacancies are based in Manchester or the Company's Headquarters near Wokingham.

**REF. NO. CW/11/6**:

Within 6-12 months you will have the chance of joining a highly professional sales team.

The company offers above average conditions of employment, including profit sharing, non-contributory pension scheme, subsidised medical insurance, and relocation expenses.

On 021-236 3781

Initial interviews to be held in London, Birmingham and Manchester.

If you are interested in working in tomorrow's world, and have, preferably, a Degree which has been applied to computing: CONTACT: DALE HADLEY

SPECIALIST COMPUTER RECRUITMENT LTD. RIRMINGHAM 021-236 3781 FREE POST
Treepost, Equity and Lew House, 35-37 Great Charles Street Queensway, Birmingham B3 2BR MANCHESTER 061-833 0676 FREEPOST Freepost, Com Exchange Buildings, Corporation Street, Manchester M48BD LONDON 01-935 0671 FREEPOST 6





#### datascene

### PROGRAMMERS:

If you can get on with us, you can get on with us, you can get on with anyong.

Il you're a middleweigh! Pragrammer with abau! I to 3 years' experience, you're probably wondering where your cateer gose from here. Ring us. Bossuse once we know who you are and whet you can do, we can older you a teilor-made job. A jab that allers real career prospects All we get is that you should welcome the chellenge of working REAL TIME, BATCH. OATABASE or COMMUNICATIONS systems. Emphasia is an IBM/ICL, but any hardware experience would be acceptable This. plus aspartence of COSOL, PLI or RPG II will guerantee a lirst-class move upwards. Our clients include Soltware houses, consultancy users, ratailers, bankara and insurance compa-les.

Sals rios range up to £5,500, but should not farm a barrier to the right

FOR FURTHER DETAILS CONTACT US NOW.

01-439 7871 Datascene Limited

Scaptre House

169-173 Regant Streat, London W1R 7FB

#### datascene

#### FORTRAN PROGRAMMERS Up to £7000

London and Home Counties if you're experienced on meintreme or minis, we have exceptional

TYPESETTING GRAPHICS OPS. RESEARCH

ENGINEERING PETROCHEMICALS FINANCE

Jobs renge from consultancy users to Soltwere houses. And each position ie lellored for you. FOR FURTHER DETAILS CONTACT US NOW

Datascene Limitad

01-439 7871

Sceptre House 169-173 Regant Street, London W1R 7FB

£5000 to £8000 PLUS • Profit Share

CMG (City of London) Ltd. is the specialist subsidiery of the

CMG Group-one of the leeding European computar sarvice

organisations with a tumover currently in excass of £8M p.a.

·THE PEOPLE wa ere looking for will be currently earning

to develop their basic experience geined to dete in one or more

• Insurance • Banking • Investment

•Telecommunications • Database

Project Management

£3,000-£6,000 p.a., have had 3-5 years experience in a systems

and programming anvironment and ballooking for the opportunity

●Free Life Assurance &

•Holidays 21 to 26 days

BUPA family cover

Pension Plan

#### datascene

JUNIOR/SENIOR OPS SHIFT LEADERS OPS MANAGERS

IT COSTS YOU NOTHING TO USE US. IT COULD COST YOU A CAREER Bacause wa've got some at the best jobs araum salarlas, benelite, conditions and praspects

We match people to labs with great care. Once you're in, epert from the accessoral letter of thanks, we don't expect to heer from you again. For e

Wa have vecencies ler Ops with IBM OOS/VS and ICL GEORGE axparience. as well as Ops for HONEYWELL, UNIVAC, BU RROUGHS, NCR and POP. In Londan, at locally. We've listed just a few oil them below. If you don't see one to suit you, don't worry. Ring us enyway, and we'll tall you what also

FOR FURTHER OFFAILS CONTACT US NOW.

Detascene Limited Scentre House 24 hour answering service

01-439 7871 24-hour answering service

169-173 Regent Street, London W1R 7FB

### datascene

JUNIOR/SENIOR OPS SHIFT LEADERS OPS MANAGERS

HERE'S A FEW OF OUR JOBS FOR YOU!

ict icl	Any	Ops Menngar	3 yrs	00002
				£5250
IBM	008	Opn Supervisor	21/4 yrs	£2000
Burroughs	MCRV	G. Landon Operator	t% vrn	£4000
				E4500 4
		C. London Snr Op	15 vrs	£4000
		C. London Operator		£4100+
ICt	OII	C. London Operator		£4100
Univec	Expg. 8	S. London Str Bo		£4000
Henreywell	Agy	S. Landon Apprator	S antiba	£3380
NCH	83	N.W. London Bossion		£3400
NCA	Any	City [No mitts] Op	6 mthn	£850Q
	ICL Burroughs IBM  Burroughs ICM ICM ICS Univec Honeywell HOR	Burroughs MCRY IBM 008  Burroughs MCRY IBM 005 IOM DQS IOM 00 . ICt 0II Univec Exec. B Honeywell Agy NCR	Burroughs NCRV C. Landon Operator IBM DOS C. Landon first teader ICT DII C. Landon first teader ICT DII C. Landon Operator ICT DII C. Landon Sir Dp ICT Landon Sir Dp ICT Landon Decalor ICT DII C. Landon Decalor	IGL OII + O/G Rupervisor 2½ yrs Supervisor 3 yrs IBM OOS Opn Supervisor 2½ yrs  Burroughs MCRV C. London Operator ½½ yrs IOM OOS C. London Rhit Leader 2 yrs IOM OOS C. London Sur Op I½ yrs ICH OII C. London Operator t yr + ICH OII Yr + ICH OII C. London Operator t yr + ICH OII YR + ICH

FOR FURTHER OFFAILS CONTACT US NOW Datascene Limited

01-439 7871 Sceptre House 169-173 Regent Street, London W1R 7FB

### datascene

SYSTEMS ANALYSTS Up to £6000

Software House-City

A Programming background, although not essential, would be so also This is just one of the jobs we have available for Analysis, if your Analyst looking for real career progression in the right steat the manay, coil us NOW!

FOR FURTHER OFFAILS CONTACT US NOW

01-439 787 Datascene Limited Sceptre House 24-hour answening at

169-173 Regent Street, London W1R 7FB

### datascene

MINI-PROGRAMMERS Communications - City

up to £6000

ment offering, smong other things, total job satisfa Ws also need Mini Programmers with a knowledge of AESEMELE. FORTRAN and CORAL 88 gained on SINGER 1580, KIENZLI W

We have vacancies for you that after selectes tanging from all sett £3 500: £5,750. They're mainly with soltware houses worked in business for Banking to flatailing. Whichever job you chaose, you can be see that allers salid carear patential — especially as the job scene is looking who healthy. Get your slice of the action by ringing us TOOAY.

FOR FURTHER DETAILS CONTACT US NOW.

**Datascene Limited** Sceptre House

01-439 787

169-173 Regent Street, London W1R 7FB

#### Systems and Programming **COUNTY DURHAM PROGRAMMING OPPORTUNITIES**

The following vecancies have occurred because of a large development in our Client's national and international data processing plans which include teleprocessing fucilities utilising CICS. Oeveloping systems for operation at verious UK and oversoes locations, those vecencies will provide all the job setisfection and challengs you could wish for. Specifically, the vacancies are as follows:

#### SENIOR PROGRAMMER — £4,350

For this position, our Clients are seaking somebody with:

- \* 3-4 years' COBOL experience \* Practice! ASSEMBLER experience
- A knowledge of OOS
   A desire to be involved in systems programming.

#### PROGRAMMERS — £3,850

For this position, the requirement is for en opplicant with 2-3 years' COBOL experience, preferably gained in en IBM environment,

The Company, who are a major international Manufacturing Corporation, offer first-class conditions of employment including: Company pension, excellent elck-pay scheme, and against new with relocation expenses where applicable.

CONTACT: TONY OF ANE OR:

Raf. CW/11/8.

SPECIALIST COMPUTER RECRUITMENT LTD. BIRMINGHAM 021-236 3781 FREEPOST
Freepost, Equity and Law House, 35-37 Great Charles Street Queensway, Birmingham B3 288.

MANCHESTER 061-833 0676 FREEPOST

Freepost, Com Exchange Buildings, Corporation Street, Manchester M4 8BD

LONDON 01-935 0671 FREEPOST 6
Freepost 6, 102, Blandford Street, London WIE 1JZ



The state of the s

### CLEK: BUSINESS ANALYST Benden A commercial beckground in O.S. M. U.A. or Work Budy with OF experience is the requirement. Belde in EC denict: duties hydro-learnwark, and included 95.7K SYSTEMS ANALYSTS BESON. Programming becoming on not second live to the control of the cont

COMPUTECH 01-794 0202



### Computer **Operator**

TIRED OF COMMUTING? BORED WITH YOUR SURROUNDINGS?

Il your enswel to these questions is 'yes' take e ook at whet Excass oon ofler . . . . you may find you are in for a pleasant change.

Selary olrce £3,800 including

Modern oilices in delightful surroundings Non-contributory pansion fund and life

Luncheon vouchers and aubsidised centeen Morigage subsidy after a qualifying period

Excellent sports and social lecilities where you can meet lots of friendly new paople

We era operating an IBM 370/138 and presently developing teleprocassing and data base systems We need someone with at less six months. expanience gained on IBM equipment with knowledge of OOS VS and GRASP/POWER willing to work on a shift basis.

it you are interested please write Or telaphone Irene Northcott, Personnel Ollicer Excess Insurance Group

The Warren Warren Road Worthing Wast Sussex BN14 900 Telephone Worthing (0903) 39933

#### Donoghue

We are e leading Midlends Computer Services Organisation offering the following. caresi opportunities at our new Computer Centre in Greater Mench

#### TRAINEE SYSTEMS ANALYSTS £3250-£4750 (plus profita)

DO YOU -have e solid record of achievement in commercial applications pro-Sprimmarg

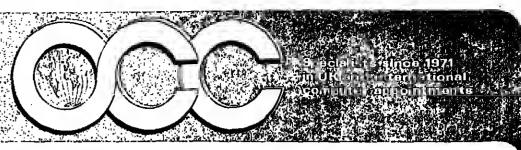
HAVE YOU -- the parsonality, energy end embition to become en effective

ARE YOU -- attracted to the prospect of meeting naw chaltengee in e wide variaty of different companies?

Then write with full details of your career and earnings to: F. R. Nugent, Data Processing Manager,

DONOGHUE INFORMATION SYSTEMS CROMWELL ROAD, BREDBURY STOCKPORT SK6 2RE

पर्वा किला की प्रकार CELL FLE STATE OF THE 



#### ccc computer personnel limited

and the other implementing systems at client sites in the U.K.

#### **Production Planning &** Control **Systems**

International Management Consultancy

**Excellent** career prospects and training in professional environment

A leading British managament consultancy markets and implaments a comprehensive products and inventory planning and control package through its computer and talecommunication subsidiary company. The package has been successfully implemented on IBM System 3, ICL 2903 and on larger machines in more than 100 organisations world wide. Increasing damand facilities products now laads to the need for two additional Systems Consultants, one based in London but travelling intermittently oversaas,

#### **Systems Consultant** £6,500-£7,500

London base with overseas travel

The Systams Consultant will join a Head Office team davaloping and maintaining the software and documentation; providing expart assistance to other consultants; installing the package, particularly abroad; providing technical support for seles proposals. Candidates will probably be 25-30 with over five years' DP experience and will be thoroughly compatent in Cobol. Experience of RPG 2 would be an advantage. Experience of implementing manufacturing systems and of BOMP or equivalent systems is required. Good communications skills and e willingnass to travel are naedad, and a knowledge of Franch or Garman would be an added bonus. Ref: 730A/CW.

#### **Systems Consultant**

£6,000-£7,000 Based Midlands or South with travel in these areas

The Consultant will become part of the team installing the package on clients' sitas in the Midlands end tha South East and could be responsible for threa or four sitas at eny ona time. The work can involva manufacturing systam dasign and programming; supervising clients' programmers and designers; training, sales support and basic devalopment work. Candidates should be thoroughly competent analyst/programmers (Cobol and RPG 2 praferred), experienced in the design and implementation of manufecturing systems including BOMP (or aquivelent). Thay must be abla to supervise small teams and communicate well with technical and non tachnical cliant staff. Evidance of pravious successful implementation experience is vital. (\$3; 29D3, atc.).

#### Ref. 730B/CW.

These are axcallant carear opportunities with a highly professional and succassful Management Consultancy. Extensiva training in consultancy techniques and on all aspects of the package will be given to new employees. Subsequent training of two waeks par annum is provided on a variety of subjects.

To apply for these positions, or for further information, please write or phone asking for Naville John.

Day—01-242 9856; Evenings or weekende—Femborough (Kent) 52017. If you are interested but are not sure of the relevance of your experience, please ring for an informal discumnion.



GREATER MANCHESTER COUNCIL

COUNTY TREASURY

#### PROGRAMMER

£3542-£5292 + 5% selary aupplement

The Centrel Electricity Generating Steard is booking for a suitable person to join the steff in the Computer Branch of the North Western Region, Cheedle Heath, Stockport The Branch provides a service to Engineering and Administrative Capatiments of the Region. Development work is organised by isome

on e project basis. The succensiul candidate will be one of a pool of programmers who are allocated to sections of the Computer Branch on a planned rots basis in order to gain experience in the variou ilnes involved.

Applicants should have at least 'A' level metitematics and two years' experience in using either high or low level languages. Experience in programming for communications devices would

Experience in programming for pointuinications devices would be an edvantage.

The central Regional computer working under George 3 coarsting system is a 192K ICL 1903T with class, magnetic tapes, line printers, document readers and graph plotter; Terminate are supported by this configuration at power stations and Regional H.O. departments, An ICL 7905 is linked to the 1903T and the IBM 370 or the Sperid's H.O. and supports VDU and printing issilities.

Applications in writing, isom either sex, giving details of age, experience, qualifications, etc., in the Personnel Mariager, C.E.G.B. Europa House, 3nd Hell Lang. Cheedle Heath, November 18, 1977, Please quote varancy number 383 / CW.

THE UNIVERSITY OF ANCHESTSR INSTITUTE OF ECISICS AND TECHNOLOGY

SPECIAL RESEARCH ASSISTANT

Gradusta or squirestent; male or female, resquirest to estal in the female, resquirest to estal in the soltware statement expects at film design of an error correction system for co-originate measuring magnituse and lega machine tools. A knowledge of manning in machine tools. A knowledge of manning in micro company in the victor of a higher degree.

This project is appropried by BBC and it is inhight for two years This statistics show yell be in the strong of 12.004. C4190 per ensure.

Applications forms are between the frequency of the frequency in the frequency of the company in the frequency in the frequency

#### Greeter Menchester Council is undertaking a program of computer development using both lete proceeding and detabase technique. Two people are required to join the team currently working on finencial systems. SENIOR DEVELOPMENT OFFICER

£4239/£4592 + £820 p.a. supplements
To take responsibility for specific emplications within the broad
area of integrated financial systems. In addition to systems and programming estivities, involvement in the management of the team (which is headed by a Group Leader) will form peri of the

Applicants must have a number of years' programming in a commercial high level language and experience of Systems."

#### DEVELOPMENT OFFICER

DEVELOPMENT OFFICER

23366/24095 + 2496 p.a. supplements

The person epointed will be a methber of a project team end will, undertake todd programming and systems work on a number of applications. Applicants should have experience of programming in a high level committed is inquise. Preferably COBOL

Ganardus conditions of service include removes, legal ress, etc. expenses, payable up to 2750/ include removes, legal ress, etc. expenses, payable up to 2750/ include tempes flexible working higher.

Applications by letter giving all relevant details to the County Personnel Officer, P.O. Box 430/ County Hall, Piccadilly Gardens, Minchester, M60/3HP by November 21st 1977.

CMG (City of London) Limited

Eastgete 73 Lemen Street London Amsterdam Frankfurt London E1 8EY 01-481 3881 Rotterdam Brussels Glasgow

Please telephone for an .

application form between 0830

and 1800 or write to:

of the following areas:

Colin Smith

\* 1



#### **MOUNCEY & PARTNERS** LIMITEO

York House, Empire Way Wambiay, Middlasex HA9 OPA

These job descriptions are intended only as a brief outline of the general exparience wa require which will, preferably, have been on large mainframes in Financiel, Commercial, Government or Manufacturing anvironments.

#### SENIOR CONSULTANTS

Major Project Management Feasibility Studies Systems investigations, Computer Audits, etc.

#### CONSULTANTS

Project Management reeponsibility, Systems Analysis, detailed

#### TECHNICAL CONSULTANTS

Technical teem manegament experience, project responsibility, detailed system design.

#### **ANALYST/PROGRAMMERS**

Similar experience as below plus some detailed systems spsc. writing, team/person management experience, etc.

#### **SENIOR PROGRAMMERS**

With experience of mechines identified below and some experience or potential in team leading, program spec. writing, etc.

#### **PROGRAMMERS**

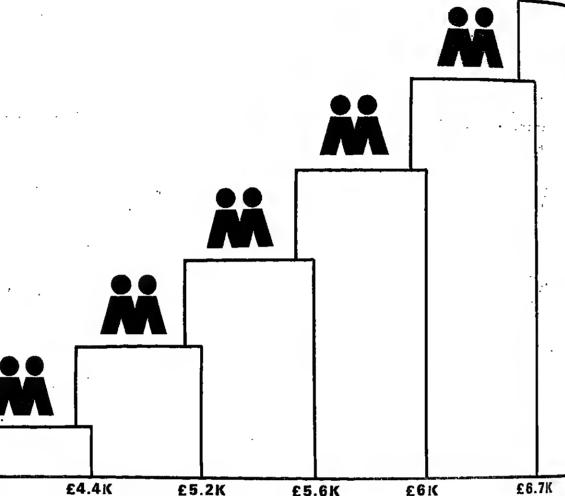
With programming experience of COBOL or ASSEMBLER on eny of

IBM 360/370's, ICL 1900, 2900's, ICL System 4's, Honeywall £3K 2000 or 66 series, NCR Century Range end Univac 1100 or

#### YOUR CHANCE TO STEP ON AND STEP UP

Mouncey's are part of the Knight Wegenstein/Lester B. Knight International Management Consultancy Group

Ring Mel Bixley (Director) or John Birch (Head of Development) 01-903 4901



£5.6K

Plus Annual Profit Sharing Bonus Scheme, Whole Family BIJPA Membership. Non-Contributory Pension Scheme, Life Insurance

MS 11/0B

MS 11/10



#### **TECHNICAL SYSTEMS GROUP** - FORTRAN PROGRAMMER

System share oporate e U.K. Timashering Sarvice besed on Honeywell GE.400 end Senes 6000 Computers.

The Technical Systems Group develops and maintains an expanding range of applications for a wide variety of technical users and enjoys an excellent reputation for the quality of its customer support service.

An additional programmer is required for our Edinburgh office. Applications ere invited from candidates who must have a minimum of two years' exparience in the FORTRAN environment; be capable of working under pressure and have a genuine interest in the involvement and management of many different technical applications.

Write for application form (quoting Ref. A.77.36) to:

Parsonnet Manager Systemshere Limited East Pilton Edinburgh EHS 2XT

(A Member of the Reyrotle Persons Group)

SYSTEMSHARE LIMITED

#### BASSETLAW DISTRICT COUNCIL **COMPUTER PROGRAMMER** Calery Grade - A.P.3/4 (£3,305-£4,214)

Applications are invited for the above post In the Computer Section of the Chief Executive's Department based at Highfield House, Carlton Road, Worksop.

An ICL RJE 7020 date communications equipment linked to a 1904S at County Hall, Noningham, is installed.

Candidates for the post must have at least 12 months progromming experience. Knowledge of communications, direct access and George 3 operations will be adventageous. A proportion of the duties will be devoted to meintaining existing and influducing new systems in conjunction with other Notlinghamshire District Councils.

Application forms can be obtained from the Parsonnel Office Control Expect Hundred form Land Cartier Furner, Worksop, SS1 073, telephone No. 8531, extension 258, and should be returned by Wednesday, November 23rd, 1977.

#### **COMPUTING ASSIGNMENTS UK AND OVERSEAS**

PRODUCT MANAGER Digital Solid State Mantories. PRODUCT MANAGER Linaer Integrated Circuits.

These two posts carry full responsibility for profit end loss with the fastast growing European Electronic Components Distributor. Applicants are expected to heve good ecademic background with a well daveloped and mature understanding of distribution together with negotieting skills sulted to dealing in the computing, industrial and professional militery merkets.

Locetion. Home Countlas. Plus frequent traval to U.S.A. Basic £8,000 plus performance bonus besed on profits. Earnings should exceed £10,000.

Benefits: Company Car + Pansion Plan.

#### COMPUTER SYSTEMS DESIGN ENGINEER

To dasign and implement the epplication of computers in the process Industries. Applicants are likely to heve experience of electrical and instrumantation control engineering in the steal, chemical and petrochamicel industries and ba totally conversant with herdwere and software necassery to commission and instell complete working

Locetion: North Eest England.

Banafits: Company cer or substantial allowance.

COMMUNICATIONS FIELD SERVICE ENGINEERS IRAN Instelletion, commissioning and maintenance of multi-station telex switching network in Iran. Must have good scadamic qualifications in telecommunications and 5 years minimum experience in field working

with advanced message switching systems. Locetions: Taharen end Shirez,
Salery: U.K. Besic £10,000 + generous allowances.

SALES ENGINEER

Major European Softwara House. Experienced in selling services in the herdwere end softwere sectors of the computing industry. Applicants with ecedemic end working

knowledge of solid state memories will be sulted to this post. Locetion: Cantrel London, £5,000 plus commission, foreçast ennual asmings £10,000.

Phone or write to B. Selwey

Tel: 01-387-1603

334 Euston Road, London NW1 3BD

Malla Software (Agy):

We are a public company involved a \*\*\*\*\*
North East of England operating over 50 64

We fervir ruranilly injurialed our compared 3(IOKD with 12Bitt characters of LAX discs."

Now we are outlinaking on extensive redespt our systems and have vecencies for the

#### SYSTEMS ANALYS

With a sound commercial and program! ground, must be able to communicate and it.

#### **PROGRAMMERS**

who should have a good grasp of programiniques and at least one year's COBOL sales.

Multi-programming experience would be let?

Bonus schomas are in operation. Applications, giving datails of career to see

Personnel Maneger AMOS H: NTON & SONE LIMI P.O. Box 24, Mester Rood THORNABY, Cleveland

West Yorkshire

### ANALYSTS, PROGRAMM AND TEAM LEADER

Required for expanding bursey and solvent in Burroughe B.70076800 Cobel of the fanting of the solvent in the so

### SOFTWARE DESIGN AND DEVELOPMENT

The use of mini-computers and microprocessors is spreading rapidly, generating exciting career opportunities for software people. One of the featest growing application areas is in the real-time control of complex automated systems for various industrial processes.

Our client is a British company, long established internationally in the forefront of its chosen field. Their organisation embodies a Software Design Department, which undertakes the design and development of standard systems software, isnguage facilities and compilers, as well as advanced application packages. These

Increasing new product development and business expansion have generated interesting career vacancies.

Located in very congenial conditions in the Northern Home Countles, these vacancies represent an excellent opportunity for career development in one of the

Terms of employment include an excellent Superannuation Scheme, 4 weeks' holiday, free life assurance, subsidised restaurant and sports/social facilities.

### TEAM LEADER - CORAL **£NEG**

A Senior Software Designer, with 5/6 years' mini-midi experience mainly on compiler development (especially Coral, Fortran, Algol, Pascel, RTL2), is required to lead a tesm responsible for the continuing development of a CORAL compiler, including the design of major enhancements and the design and implementation of supporting software.

### TEAM LEADER - Interactive Languages & Support £NEG

Responsible for the detailed design of interactive language systems, assemblers, linkers, etc., this Team Leader will probably have 4 years' experience on "systems" software, including interactive languages. He/she will currently be functioning as a team leader and will also have knowledge of compilers or resi-time operating systems, or other relevant areas.

These are printerly technical roles, but team leading ability is also essential.

### SENIOR SOFTWARE DESIGNER - CORAL Up to £7500 p.a.

Reporting to the Team Leader — CORAL, the Senior Software Designer will be responsible for detailed design and implementation of sections of the CORAL

Candidates will have some 3 years' relevant experience, of which some 50% should have been on minis.

RW 44/3

### SOFTWARE DESIGNER Up to £5500 p.a.

A man or woman with two or more years' experience is required to work in the real-time operating systems ares, or perhaps detailed level compiler work.

The important qualifications for this job are application and the ability to display a creative fiair to software development work. Knowledge of operating systems or compilers would be advantageous, but evidence of creativity and mental capability is more important.

#### SOFTWARE DESIGNERS - APPLICATIONS AND SYSTEMS SOFTWARE Up to £5500 p.a.

Possibly graded as Senior Software Designera, these men/women will join a tesm with the responsibility to add new application packages and operating systems and language facilities to the company's established product range. 4 years' experience, ideally gained in a process control environment, either as a member of a custom application group, or as part of a design group. Knowledge of at lesst two of the following must be evident:

**Process Control** Communications Real Time Operating Systems Language Processors Support Systems

RW 44/5

The above vacancies are all first-class opportunities to exercise your software skills to the full, You will be working with modern computers—Digital PDP/II range—and utilising them in a state-of-the-art, real-time process control environment. The company's systems are in use throughout the world, controlling a wide variety of industrial processes, such as ateelmaking and chemical plant, and the range of applications will undoubtedly be spread even further. The environment is thus interesting and stimulating and the work demanding and fulfilling.

The company places great store by its people, who constitute its principal asset. We would, therefore, be interested in hearing from individuals who have experience in the field and have a contribution to make, even though they need not exactly fit the above job descriptions. You are invited to telephone Tony Baker 01-499 4501 to discuss these opportunities.

hutchinson-scoppins reculify the phone 01 499 4501



### HOLLAND

Our client, a leading Dutch Bank, will be conducting interviews in the UK on 17th & 18th NOVEMBER

Thay raquira axparienced staff to fill the following vacancias:

#### THREE PROGRAMMERS SENIOR PROGRAMMER SYSTEMS ANALYST

Tha salary range is very competitive and ranges from:

#### 40,000-50,000 FLS BASIC + FRINGE BENEFITS

Have you experience in the following areas:

Togethar with the abilities to command tha respect of fallow profassionals

Then please apply without delay to: Gordon Cairna, John Goldamith Computer Services Ltd., 15 Buckingham Polace Road, London SW1

> Telaphone: Office 01-529 5356 Homa 01-653 4227 24 hour answering sarvice

Computing Services Association

WE ARE ALWAYS INTERESTED IN HELPING YOU WITH YOUR CAREER

John Goldsmith Computar Servicaa Ltd., 15, Buckingham Palace Road, London, S.W.1. Tel: 01-828 5356-24 hour answaring aarvice.

#### JOHN GOLDSMITH COMPUTER SERVICES LTD

### 2 key Customer Support Specialists - Australia

A\$14-20,000

The continued growth of ICL Australia provides opportunities for experienced computer professionals. In particular, the Sydney sales region now requires two key people to provide specialised support to a growing customer base. The appointments are in:

**Production Control** 

This position provides specialist support to customers with production control requirements. The work involves NIMMS and OMAC, and experience is required. In NIMMS. You will provide sales support to customers moving to 2900 in the medium term who

systems with particular emphasis on George 3. You will be supporting the sales force sulling 2900 DME and VME. To be successful, you should have had several years' experience with George 3. will then wish to implement 2900 production control software.

These positions are permanent appointments. Competitive salaries are offered in the range AS14-20,000 according to your experience, and relocation costs will be paid for you and your family. For further information please contact Carole Hudson. ICL Bridge House North, Putney, London SW6;

telephone 01-788 7272 extension 2047. Please quote

International

**Operating Systems** 

The requirement here is to provide detailed support for operating

Computers Ihink computers-think ICL



We are a leading British Factoring Company with an ennual tumover currently approaching £100 nillion, specialising in providing finance for

Equipment I.C.L. 1901T with 36K, EDS 60s, Meg. topes

A COGOL programmer is required to work with e small from in a financial environment. The setary will depend upon experience and the post carried excellent fringe benefits.

Mr. M. J. Parsonage Personnel and Training Manager Alox. Lawrie Factors Ltd. Benbury, Oxon OX16 76N Telephone: Benbury (0395) 4491

SOUTH WESTERN Regional Health Authority

#### Computer **Programmer**

Salary Scale: £3534-£4344 p.s. (plue Phase I and Il supplements

Experienced progremmer required immediately with good COBOL experience and preferably lamiliar with ICL/Honeywell

The Computer Osportmoni is expending into the communications ilidi; present instellation: ICL 2903 for TP work; also Honeywell 2080, due to be replaced with ICL 2980 in 1979. The work commitment involves developing finencial and medical systems for the new equipment and the current

Application forms and job descriptions obtainable from the Regional Personnel Officer, Establishment Section. U.T.F. House, 28 King Square, Bristol 852 8Hy. Closing date: 28rd November, 1977

## £4,000 to £14,000

of Europes leading computor service organisations, and because of our size and wide range of luterests, we can offer exciting opportunities plus a variety of new experiences you would be unlikely to get anywhore alse:

> Naw Innguages Advanced technology Diversa interests talacommunications, aarospaca and patrochamicals)

Naw machines

Couple this with real opportunities for advancement an tha top salaries we are prapared to offer and you'll realise you'll "make it with Marcol"soonar and in more ways than ona. Contact: Derek Ashley, 01-402 9355, Marcol Computar Sarvices, 60 Quaans Gardana, London W2:



COBOL PROG. GLOUCESTERSHIRE

Parametral Controlts

c £4,000 p.a. + benefits nie 01-439 8481 (24 hours) EFFECTIA GRAVIS

CAPITAL APPIS. LLL FORTRAN aduate Traines



### ARE YOU INTERESTED IN ORIGINAL SOFTWARE **DEVELOPMENT?**

A series of development projects on COMPILERS, DBMS and TRANSACTION PROCESSING SYSTEMS, are currently being undertaken by the software development group of this major manufacturer of mini computers. Based just outside London, this small group has total company-wide design and development responsibility for these projects.

If you are young (less than 30), intelligent, and enjoy creative programming (or even are bored with applications work), then these positions offer an unusually stimulating environment. The working surroundings are especially pleasant. Facilities include three systems dedicated to on-line program development. You will probably have some programming experience in a low-level language, real-time environment; you might well have a Computer Sciences academic background.

Above all, you will be attracted by the opportunity to create, develop and implement your own ideas in these important areas of software technology. Normal big company benefits include salaries in the range:

£4000 + £6500

RW 42/3

#### A NEW SALES CHALLENGE

- ★ GROWTH MARKET
- ★ HIGH EARNINGS POTENTIAL
- **★** CAREER DEVELOPMENT OPPORTUNITIES

Our clients are leaders in the field of data and message communications — one of the fastest growing markets in the world today. They have achieved their present eminence through product excellence and shear professionalism.

There is now a ground-floor opportunity for a small number of systems salesmen to generate new business and develop the existing customer base. For those seeking new fields to conquer, this represents an opportunity to participate in the growth of a dynamic, but well established young company.

We are interested in hearing from you if you have:

— A strong personallty enforced by determination and professionalism

- A real, practical interest in modern business

A liunger for success

You will be well supported and well paid by high basic salaries and commission based on realistic targets. Company cars are also provided.

Potential earnings are unlimited, and, on the average, salesmen can expect to earn somewhat in excess of

£10,000 p.a.

RW 45/1

### hutchinson-scoggins recruiter

#### **VARIETY IS THE CHALLENGE OF THE JOB!**

#### **MIDLANDS**

SALARIES TO £6,500 p.a.

Our clients, the computer centre for a major International group of companies, in the engineering industry, seek computer professionals to join their data processing department developing systems for approximately twenty companies throughout the U.K. The well managed installation comprises of a large IBM 370 series machine, supporting a comprehensive tele-processing network utilising "CICS".

#### Programmers

Salariea to £4.500

Our clients require a minimum of 12 months experience of PL/1. The successful candidates will be working in a project orientated environment, where the considerable number of companies supported, ensures continuous challenge. Excellent opportunities for promotion exiat for sultably motivated people.

#### Analyst/Programmers/ **Systems Designers**

Saiaries to £5,500

For this position, our clients require a minimum of two years grounding in PL/I, combined with demonstrated experience of analysis or systems design. Successful applicants will receive formal systems training and will be initially involved with on-line order processing, production control and accountancy packages. Successful candidates may be expected to lialse at all levels within the group companies and work on a cost

#### Analyst and **Senior Analyst**

Successfui candidates should have a minimum of three years systems experience; gained in a commercial or manufacturing environment. They will be involved in proposals, development and budgeting of systams for member companies. Exparience of high leval meetings with financial and manufacturing line management would be a distinct advantage for these positions.

The site is located within daily travelling distance of Birmingham/ Wolvamampton, and thair close proximity to the motorway natwork enables easy access to rural Warwickshire, Worcestershire and Staffordshire. They offer large company benefits including pension and life assurance schemes, sports and social facilities (including squash courta), generous holiday entitiement and excellent relocation expenses where applicable.

For further details contact: ROD BEESON on 021-236 3781

REF. NO. CW/11/7 SPECIALIST COMPUTER RECRUITMENT LTD.

RIRMINGHAM 021-236 3781 FREEPOST Freepost, Equity and Law House, 35-37 Great Charles Street Queensway, Birmingham B3 2BR MANCHESTER 061-833 0676 FREEPOST

Freepost, Com Exchange Buildings, Corporation Street, Mar LONDON 01-935 0671 FREEPOST 6





### Assembler Programmers Project Leaders

### HOW GOOD ARE YOU?

6 Prizes of £20 6 Prizes of £10

#### Certificates of Merit for all correct entries

After execution of the following code:

PROGRAM	CSECT	
OTHER	BALR USING LM USING PR	12,0 *,12 15,4 FULLWORD OGRAM,15
INSA INSB FULLWORD MSGMVC MSGL MSG	EX BCT B DC DC MVC DC DC	1,MSGMVC 4,TEST TESTB A(OTHER) A(17,L' MSG1, MSG1, 18,2) MSG (1), O(2) CL4' ABCDEFGH' CL4'IJKL'
TESTB TEST TESTA	DROP CLI LA SH	12 MSG1,C' A' 0,25(0)

Q1 Has the instruction 'TESTB' been executed? Q2 Which instructions, if any, have bean altered (and how)? Q3 Which ere the contents of the field MSG? Q4 Which base reglater is used by the instruction INSA? Q5 Which beaa register is used by the instruction TESTA? Q6 What does register Ocontain?

Good Scora? Drop in to check your answers et 184 Naw Kings Road, Fulham SVV6, where you will also find out more about SDI and the cereer opportunities that are currently aveilable. (Nearest Tube Station, Putney Bridga).

If unable to call please mail your answers along with your name, address, home end business telephona numbers to:--SDI, 184 New Kings Road, London SW6.

For more information about career opportunities, phone len Marr at 01-736 1382.

#### RULES

- Personel entries may be delivered personally to SDI of any time before B.30pm on Friday, 11th November 1977.
- Postal entries may be postmarked any time before 12 noon on Monday, 14th November 1977.

Personal entry prizes will be drawn at SDt at 8.45pm on Friday, 11th November: Prizes will be awarded at 7pm. Prizes of C20 will be awarded for the first six correct entries opened.

shgrove lined West, Abardoen ABS 2LU Closing Mais of the Agent-Ger

Postalentry prizes will be drawn at 6.45 pm on Tuesday, 15th November 1977. Prizes of £ t 0 will be awarded for the first six correct entries opened.

3, FULLWORD+6

5. A certificate of merit will be

### Sales Executives

Do you want a divorce? Are you tired of your present company? Does it really appreciate what you are trying to do for it? Does it have a product you are proud of? Is your work exciting?

If your answer is yes yes no no It's time for a second marriage Exciting things happen with Prime

in four short years we have built a worldwide. company and launched three new series of super-powerful mini computers. We operate from five different offices in the UK and are busy opening three more. The odds are that wherever you live we are interested if you are good enough for us

We only employ real professionals, and the present learn is hand-picked to be the best in the industry. We want to expand our learn but we won't compromise on quality.

We want experienced sales professionals who won't settle for a quiet cosy life working 9-5 and waiting for the boss to drop dead.

We want active, positive-thinking people who can really work on their own initiative. We'll work you until you drop, and we will reward you to the highest industry standards for

Prime is a challenge on exerting challenge and really we are only matheginning

Ring (1] - Safe properties for Wendy or Shela Ֆուռ t⊳5թ.m

All we need is a three minute charant your name and address. We will take it from there Why not call us today? (or write if you must)

PS, we will be at Compector if you would be to take a look at us. Stand U79/U80

Prime Computer (UK) Ltd., The Coach House, 173 Sheen Lane, East Sheen, Lendon SW1-10NA

#### PRIME

#### SYSTEMS ANALYST K12.000 OPERATIONS SUPERVISOR/INSTRUCTOR K11,000 K10.000

ANALYST/PROGRAMMERS (2) SYSTEMS PROGRAMMER (CURRENT EXCHANGE RATE K1 = 70p)

Mezembe Tractor Company Ltd., the Caterpiller earthmoving oquipment dealership in Zamble, has vecencles for the ebove

stoff.
The IBM computer currently in use is a 384K 370/135, running under OOS/VS/POWER. Already operational applications include on-line inventory control systems running under CICS and batch financial systems.

Additional steff ero now required in order to implement computer systems in the other group compenies as well as on-going development for Mezembo.

cn-going development for Mezambo.

The Systems Analyst should have a minimum of 2 years experionce including dealign of on-line systems. The Operations Supervisor/Instructor will be raquired to devise and implement o treining scheme for Zombiens in the operations ores. The Analyst/Programmers should have a minimum of 2 years' experience of PL/1 programming. An ability to devise a formal treining ocurse for Zambiens would be an oase.

be en case.

The Systems Programmer should have approximately one year's experience of DOS/VS and will be required to carry out some opplication programming using CICS/VS.

All opplicants must be in possession of a Oegree and/or membership of a professional computer body.

The same of amployment will be on a mutually renewable nt will be on a mutually renewable

2-year contract and the Company will provide in addition to the basic salarice quoted above:

(a) 25% gratuity on all contract samings

(b) Free furnished accommodation

Fres furnished accommodation
Rotum eir feree for the epplicont, and family (if any)
Assistance with the opplicant's children's education

fees where appropriate
Baggoge/settling-in allowance The O.P. Menager will be conducting interviews in London early in December and applications should in the first instance

Mr. G. S. Peterken P. H. Recruitment Limited Excel House 42 Upper Barkeley Street LONDON W1H 7PL

1900 OP GEORGE II To 24,000 p.s. + bonus

Phone 01-439 6481 (24 haurs) EFFECTIA GRAVIS

PLAN EXPERIENCE WEST LONDON

(24 hours) EFFECTIA GRAVIS

SYSTEMS PROG. lione 01-439 6481

For further details, please telephone.
Miles A. Redman on 01-383 1080 Ex

### COUNCIL OF

#### Systems Analyst WITH VISION

Kent County Chuncil are fully exerts of the contribution of good and state the allectiveness of the organisation. Our Lizers are parametrized strategy who is not straid to guide them into echieving improvements in the anti-Attactive salety plus ossistence with relocation expanses plansant surroundings in on ideal part of the county

If you feel that you can (ii) this position phone West Maling (if)!! Satenelon 286, or write to the Cavelopment Manager, New Computer Unit, The Air Station, West Maling, Kent, for at America.

#### ELECTRONIC TEST ENGINEE EC2 depending on age and experience

The Exchenge Telegraph Co. Ltd. have a pecelor like Electronic Test Engineer at their Engineering Division Like EC2. Responsible to the Technical Mineset Printers, duties will involve testing and transfer in the printers and especiated equipments and especiated equipments. development of special customer requirems documentation and drawings.

Candidates, aged 20 f. mills have an alegarithms and control of the control of th

#### **CURRENT SELECTION**

#### **Operators to Shift Leaders** £2,000-£4,500 (incl.)

LONDON & HOME COUNTIES

We have meny vecencies covering all types of mechines and tocations. Some firms will retrain from one menufacturer to enother. Ramamber those positions era for shift working only. Hurry CW 45/1 Patricie

#### **New Sales Support & Sales** Opportunities — UK

A major international computer manufacturer is announcing in Europe an exciting proven range of smalf computers in the New Year. They therefore immediately require Brench Menagers. Systeme Analysts, Selesmen and Technical Support Personnel es well es e UK Treining Officer. Pravious experience should be with RPGII type computers or mini computers using commercial skills with a professional approach to problem solving. Personnel will have a marvellous opportunity to get in on the ground floor where selories will be very competitive. Vicancies exist in W. LONDON, BIRMINGHAM, MANCHESTER and LEEDS. CW 45/2 Michael.

#### Successful Salesmen to £12K quota earnings

We now have 12 different firms for both hordware and systems only companies who are anxious to maet succeasful salesmen in this industry. They just have previous relevent small systems experience (some VRCe will be considered). All firms have bonus schemes and care or car ellowence. Most positions in S.E. England, but three in Midlende. CW45/3. Micheef.

#### Systems Consultants £6,000-£9,500

Sevan large well-established consultencies wish to recruit systems people with ell-round exparience on third generation equipment and the right personelity to deel with clients who require e first rate earvice. Technical communications consultents are also required where in-depth implementation experience of IBM or tCt. T/P message awitching networks. atc., are essential. Excallent fringe benefits and prospects. CW45/4. Micheel.

#### **Mini Computer Programmers** to £6.950

Your experience is required now. A very large number of vecencies are registered where a knowledge of Assembler or communications oxperience is essential (VRC programmers would also be considered). Opportunitiae exist in S.W., N.W. or W. London, Surrey, Herte, and Manchester in this exciting and rewarding field. There has also been registered some oversees posts to people with five or more yeers in mini computers. CW45/5. Michael.

#### **Contract Programmers** to £190 p.w.

COBDL under DOS or OS for C. London. Pt/1, OS or CICS, PDP/11 or good IMS for various ocations for three months plus. Also IBM vacancies in GERMANY, BELGIUM & HOLLAND. Ask for the Contrecte Officer on 01-995 223B. CW45/B. Micheel.

PLEASE EITHER COMPLETE THE FORM ALONGSIDE OR TELEPHONE UCA FOR DETAILS OF THESE AND SIMILAR VACANCIES.

> 01-995 3883 CONTRACT STAFF 01-995 2236

#### UNIVERSAL COMPUTER ASSOCIATE RECRUITMENT CONSULTANTS



### LEADS THE WAY

Universal Computer Associetes, established in 1969, has ragistered nearly 14,000 applicants in the D.P. industry and has subsequently filled vacancias within avery typa of organisation both in the UK and overseas.

If you are thinking of using a successful and friendly consultancy, whether it is for PERMANENT or CONTRACT vacancies, or for peopla to fill tham, then UNIVERSAL COMPUTER ASSOCIATES ARE AT YOUR SERVICE.

Phone: 01-995 3883 or 01-958 6138 up to 10 p.m.

#### PROGRAMMERS, ANALYSTS, CONSULTANTS YOUR CAREER IS VITAL -LET US IMPROVE IT FOR YOU!



Computer Services & Recruitment Consultents

**UNIVERSAL COMPUTER ASSOCIATES** Deta Express House

3 Prospect Piece, Heethfield Terrece, Chiawick, W4, 01-995 3883

Name (full)			1	
Address			UCA No.:	
			<del></del>	ome)
	<u> </u>		(used discreetly	y) (work) Ext.
<del></del>		Position require	ed	
Age	Merital status	Salnry required		
Period of notice	Children's egee		Areas required	
Cer owner/driver	Foreign lengueges?		Willing to mov	e? Within UK: Yes/No Overseas: Yes/N
Education — 'O'	'A' levels/degress/other		Areae consider	
			Instelletion pre	
EDP courses	,			ive softwere house/Consultancy/Bureaux?
			Interested in fre	Yea/N
	EMPLOYMENT RECORD		Progremme	Periance work?
etes& finel salery most recent first)	Employers (most recent first)	Computer & model	lengueges & operaling systems	Poeltion, dulies end epplicetions underleken end completed
	•			•
	·			
	·			
			·	
.			-,	
	ED	PEXPERIEN	CE	
Time pariod to nea	erast quartar year: Operating	Prog	<del></del>	0-15-4-35
Control proceduras			Managament	Sales/other
	arating systems you know well		wansdament.	Total in DP
and aim Ab	arania starting ton Vilon Mall			
				が、「大力なのでは、「大力」という。 かんしょ かん かん アイトリカル (内) (中での) ちょうかん こうべん
Assase your experi	ence: S = some A = adequate F	full (leave blank	if not relevent) c	of the following

**HURRY POST NOW!** 

Software davelopment

announcement of the second of

VRC/Word Processing 1 Land Time-Sharing

MICR/OCR

Sciantille programming

Microprocessors

Real time

PACKAGES/SOFTWARE FILETAB DRIVER CICS



EMS CONSULTANTS LTD 61 LDWER STREET NEWCASTLE-UNDER-LYME

Management Services & Computing Division Telaphone: 0782 623665/6/7/B olaymunt Agency & Employment Iness License No. M66

C) Form Design EMS Copyright March 1977

from the TMS supplies to cheeds in Critication trains in build from probles complete this the careful fire, and so long as intermedices imputs only in the rate are of temporal about the careful system. On the careful fire according to the careful system is the careful fire according to the careful system.

For Office Use only

SURNAME									Reason for Sacking	Char	r ta trai tabilita	Surft out		Com	peny Ro	ef. No.	
Other Names					<del></del>				Trouser for Sacking	Cherry	ga						
Aridross							Telaphon	10	Derails of type of po	sition	wanted						
						Home								•			
						Bus.			Additional Informati								
Post Code							Exi.				n R. I O line	Dracin vous		duties and application			
Age	Oate of Bir	15	Place of Birth		Nationality	7	Heighr	Waight	1	.,	10 10 1110	procie, your	current	duties and application	e experi	ience	
Married	Children		ar Owner	Oriver					]								
Withhied	Commen	"	Owner	Oliver		lature o	I any Serious IIIn	1055	11								
Position Require	rd						Required	Salary Rang	<del>.</del>								
				_			noquiu.	Colary Harig	<b>"  </b>								
Present Position	n						Salary		11								
			WHERE DO	VOLIMA	SH TO WORK				<b></b>								
Within U.K.		Yes No	Acceptable /			Abroad		YB6/No	41								
Will you move		Yes No				Europe		Yes/No	11								
						Middla	est	Yes/No				FOREIG	AA I M	IGUAGES		<del></del>	
Degrating	Bro	Car Subseque o			EXPERIENCE				Spokar	<u> </u>	$\neg \neg$	TOTILL	Writte			Read	
Digunda	1 710	ព្រះឧហាយមេខ	Systen	ns Ocaign	Systems An	alysis	Management	Total						<del></del>		Need	
Avadable for lute	erviews								41								
Available for En	ployment																
		OETAI	LS OF SECON	OARY A	NO FURTHER E	OUCAT	ION		Plassa show the num	iber ot	veals exp	orionca of the	a Lollou	uing Mhair way		s not specified plees	
Schools				Oat	e Examinat	ions Pa	sed		the blank spaces.		7-2-5	O IOICO OI III	a TOIJOY	ving. vvneie your expe	rienco k	s not specified plees	iO USE
									HAROWARE		OPER	ATING SYS	ГЕМ	LANGUAGES		PACKAGES/SOFT	T10/A
									IBM 360/370			DOS		COBOL	Т	FILETAB	T
				İ					ICL 1900			os		FORTRAN		DRIVER	
									ICL 2960/2970	-		T/MFT		ASSEMBLER		CICS	
			100	1	1				UNIVAC 1100			ORGE 1		PLAN	_	IMS	$\bot$
Callege/Universi	aly			Oat	e Examinat	ons Po	sed		UNIVAC other	-	-	DRGE 3	-	PL1 RPG 2	<del></del>	BOMP	+
									BURROUGH,700/800	_		MCP	-	USERCODE	+-	PERT	+
				1	1.1				BURROUGHS other		E	xec B		AUTOCODE	1	VSAM	+
									HONEYWELL 66	1	(	COS		EASYCOOER	1	IDS/TDS	70
				1					HONEYWELL 6000		OS	2000/200		ALGOL	1	MICROFILMING	
Business Course	s with Date	!!\s			_ 1				HONEYWELL offier			B/VMEK		NEAT		TELEPROCESSIN	iĞ
									NCR		. J	Lovel	<u> </u>	CORAL		DMS	41
1									POP	-			-	DL1	1		
											· · ·				1-		
t. Present Emp														1	1.		
Position	Noyer				-	Tov	(T)		3. Past Employer	<u> </u>	<u> </u>	· · · · · · · · · · · · · · · · · · ·	<u> </u>	<u>'</u>	Town	<u> </u>	
- Conton			Ty DE (	AE INICT A	LLATION	Oate	Joined		Position							Joined	
Commercial		Buraau	1776		Burênce		Scientilic					TYPEOF	NSTA	LLATION			
Manufacturing		Banking			ducetion	卜	Enginearing		Commercial  Manufacturing	$\vdash$	Bureau		_	Insuranca	$^{-}$	Scientilic	
HAR	DWARE		OPE	RATING S	YSTEM		LANGUAGE		HAROWA	RE	Benkin		ECAT!	Education		Engineering	
									TIANOVA.	AITE .		J OP	EHATI	NG SYSTEM		LANGUAGES	
Soltware or Pack	agac																
									Software un Packeges								
On-Line ·		Real Tim	ne	T Ti	me Sharing		<del></del>		On-Line	1							
R.J.E.		Tale Pro	cessing		ata Base	-			R.J.E.		Real Tin			Time Sharing			I
	AP	PLICATIO	N AREAS YO		BEEN INVOLVED	IN I	Pleasa Tick)			ΔP	Tele Pro		NI LUA	Data Base VE BEEN INVOLVED I	2		$\bot$
Cost Accounting		Ganaral	Ledge		enpower Planni		Personnel	-	Cost Accounting		General		JU HA				-
Budgeting Forecasting	<u> </u>	Credir C			ock Control		Payroll	-	Budgeting		Credit C	_		Manpower Planning Stock Control	-	Parsonnel	16-
Corporate Plennin	·		ocessing		oduction Contro	ol _	O.R.		Forecasting .			Oceasing	$\vdash$	Preduction Control	-	Psyroll O.R.	. B-
Sales Ledger	ng	Markarin	-		trochemicels		Redai		Corporate Planning		Markatir	-		Petrochamicals		Rader	1
Pischase Ledger		Oistribut	nalysis .		naar Programmii	OF _	Statistics		Seles Ledger		Distribut	ion .		Lineal Programming	_	Statletics	
		manic A	marysis .	- Si	mulation	-	-		Purchase Ledger	_	Trallic A	nelysie		Simulation			
Projects Complete	ed			Re	sponsibilities	<del>-</del>	<u> </u>		Projects Completed	1			1				
									, rejecte completed				. 1	Responsibilities			
Drawin C															. * *	1.	
Position Position	NOYER					. Town			PLEASE CHECK THAT	EAC	H SECTIO	N HAS BEEN	TICK	EO APPROPRIATELY			-
·			Tyles c				Joined					ONAL INFO				184	
Commercial		Burgau	TYPE O	INSTAL		<u>, .</u>	· .		General								
Manufacturing	·_	Banking			urance ucation	}	Scientific .	·  -		7					٠.	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
HARD	WARE		OPER	ATING S		<del></del>	· LANGUAGES				J. 24.						1 .
			. ,				- TATOMOES		Data Processing			-					
						-									$J_{\alpha}(0)$		
Suftware or Packe	Brine				. 6 (1)		 	,		.,			$\cdot \cdot J$		:		
- an racks	-403				•			4 1		- 1	4	u i	1	we to be a way		ers and the second	
On Line		Real Tim		- T			· · · · · · · · · · · · · · · · · · ·		Terminals	20.0	4 4 5	1	P.	1. 19 m 19 8 1 1 1	1.80	1	
JE		Tale Proc			ne Shering ta Base	·  -	- : : `		6-4	· · · ·					. 9 - 6 %		9
	AP				BEEN INVOLVE	D IN	<u> </u>		Software/ Packages	,	4.7.4	Sec. 1. 18		100	,	18 18 18 18 18 18 18 18 18 18 18 18 18 1	

Personnel

Peyroll

0.R.

Raddr

Stock Control

Petrochemicele

Simulation

**Production Control** 

Lineor Programming



#### **ICL New Range Programmers** South West & West Country To £7000

services available

For the most professional, sophisticated Recruit-

ment Consultancy, E.M.S. stand supreme, E.M.S.

get results! Select from thousands of candidates

on our files. Telephone or write for us to resolve

all those outstanding recruitment problems. All

leading D.P. users use E.M.S. You probably do also

but now, please note the sophisticated additional

We urgently need staff expanenced on New Range for enumbar of large users, including menulecturars and bureaux. Vacencies offer permanent employment or contract stetus, eccording to individual experience. Work functions include working on new spplication present include working on new spplication present include working on new spplication present include working and awide variety of technical and acientific functions. Attractive frange benefits also exist with leading clients for contract staff:

#### **IBM Programmers** Derby To £4500

Our clients require a number of additional Programmer Analysis to work in smell project teams epili, each to the teams apili, each to the teams apili, each to the team are commercial batch work, Payroll, Accounts, Salas, Stores, etc. Language experience should be ASSEMBLER, COBOL or PL/1. Some on-line development is envisaged within the next 2 years.

#### Sales Support **Programmers** & Analysts Edinburgh To £5500

Minimum A Leval qualifications will apply. Mimimum A Level qualifications will apply. Candidates will be call owners with current driving ficences and show a good aptitude for oftent lieison. Outles will include feestbility studies, writing proposels on post seles consulting. Besically, you would advise end guide citents on new hardware tenges, both Analysis and Programmers must have at least 2 years COSOL or ALGOL programming Consultant: Selina Mills.

#### **Business Analyst** Staffs Analyst/Programmer Wilts £4000-£5500

Hardware preferefence will be for ICL COBOL in a menufacturing systems environment using on-line and RJE. The Analyst/Programmor will be required to investigete and dealgn minor projects either elone, or se part of e project teem. Some programming will also be raquired. The position would euit e Programmer with 2 years' experience wishing to move into Systeme Analysis.

The Business Analysts will be

move into Systems Analysis.

The Business Analyst will be reaponable for all systems development within the Wilfenhafl erea, reporting to the Chiel Systems Analyst at Swindon. Applications wilf be broad but related to Engineering/Manufecturing in content, and ere likely to be on-line to the Swindon mainframe vie an RJE terminal.

#### **Leading Vacancies** Middlesex To £6500

Project Leaders, Senior Analysts, Analysts, Program Ossigners, Chief Programmers and Programmers.

Programmers.
Opportunities exist with a large group, substantially increasing their investment in modern, sophisticated hardware, for a wide renge of experienced DP steff. Experience in the following areas is urgently required: Production Control, On-lina/Real time Systems. Database development, general commercial Accounting and Sales Order Processing. down to COBOL programming. Opportunities had to be missaed in the Mit. 1882.

#### **IBM Analyst** Manchester To £4800

Good commerciel experience in en IBM environme is sought. Ideally epplicents should have worked at less 2 years in a priler position. The group have en international of the consumer market; consultant: Don Welklate.

#### IBM 370 PL/1 & Assembler South Midlands To £7000

EM.S. CONSULTANTS LTD.

#1 LOWER STREET
NEWGASTIE STAFFS:

Any experience of IMS would be especially Any experience of IMS would be especially welcomed. We have urgent, Intge-scalin requirements for a leading industrial group about to embark upon a major systems development exorcism. Experience of working in a manufacturing industry would be adventageous. Stoff will be expected to work in large project towns, involving a tight travelling throughout the U.K. to other group sites if required during latter 1978. Attractive salaries will be paid to a wide range of applications and software support staff with 2 years and more practical experience. experience. Consultant: Niall Bradley

#### ICL 1900 COBOL **Programmers** West Country To £5000

A small Gloucestershire bureau has vecancies for additional Programmers to usual with availability and counts. Candidates will be given appropriate applications training where necessary. Opportunities exist for both Junior and Senior staff working in a very popular location with good middle term career prospects. prospects. Consultant: John Wood.

#### Systems Programmers, Systems Designers, Systems Engineers London To £5300

A large banking group have numerous vecencise for steff exparienced in DOS/VS, ASSEMBLER or COBDL end possibly CICS. A minimum 2 years IBM 370 experience is assential. Equally, relevant staff with experience of financial system, or banking would be of spucial manual. Examination working conditional are available at a convenient City location. 

#### **Systems** Analysts West Midlands To £4400

Packages \* Facilities Management

\*-Client interviewing facilities Birmingham \*Newcastle (Staffs.)

\* Systems, Programming and Operations Hire Services

Training/Conference Facilities (Birmingham Data Centre)

Bureau & Time Sharing Services

\* Software - Applications

\* Turnkey Systems

Prolomneu wilf by lor condidates advested to at less HNO Inval. The main activities of systems development include Investigation of existing systems and ossessment of luture requirements. Proportation of initial reports and agreements will usors. Proportation of individual program specifications including tost data. Systems testing ntid Prinifol/Pilot running and considered of im schedules which must be adhered to. Consultant: John Wood

#### IBM 370 PL/1 Analysts/ **Programmers** Lancashire

Any experience of IMS would be appenially. Any experience of IMS would be aspecially welcomed. We have urgent, lerge, seek requirements for eleading industrial group bout to requirements for eleading industrial group bout to emberk upon a mejor systems development service. Experience of working in a menufacturing industry would be edventageous. Sleff will be expected work in lerge project teems, involving light account of the project teems, involving light account controls. Opportunities elso exist lot yavelled controls. Opportunities elso exist lot yavelled throughout the U.K. to other group sites if required during letter 1978. Attroctive salaries will be paid a during letter 1978. Attroctive salaries will be paid to evide ronge of upplications end software support stuff with 2 years' and more precises are similar to the salaries. stuff with 2 years' and more precical existence.
Consultent: Niali Bradley.

> Consultants Ltd. EMS Consultants Ltd Newcastle-under Lyne Staffs ST6 2RS; Telephona 0782 023688 (10 lines)

Coar Accounting

Corporato Plannino

Budgeting

Forecasting

Sales Ludger

Purchaso Ledger

Projects Completed

Ganeral Ludger

Order Processing

Traffic Analysis

Credit Control

Marketing

Distribution

TOWN CLERK & CHIEF EXECUTIVE'S DEPARTMENT

in order to meet an increasing demand for Systems Develop-ment, a number of experienced analysts and programmes are required. Successful candidates will enjoy good working

The computer configuration is based upon an f6M 370/135 with distributed Olivetti and Plessey processors capturing date for the main frame.

#### Senior Systems **Analyst**

(Ref. C£262/CW) Salary £5,494-£6,055

Candidates should possess 7 years relevant experience end a progremming beckground. They should give evidence of their ebility to take fulf responsibility for a project from initial studies

#### **Systems Analyst**

(Ref. CE286/CW)

Salary £5,494-£5,797

Three years' relevant experience with practical progremmir knowledge and a desire to progress to project feadership.

#### **Senior Programmer**

Salary £5,494-£5,797

Five years' programming experience, most of which should heve been in COBOL and BAL, is expected. The ability to lead a team of programmers is essential, initially, the successful candidate will be based at Bexley for about a year to esset in the

#### **Programmers** (Ref. C£284/CW)

Salary £3,694-£4,900

Approximately two years' programming experience, some of which should have been in CO9OL or SAL to expected, though training in oither lenguage cen be provided.

If you would like to discuss any of the above positions, places ring Mrs. L. Herris, Systeme Manager, on 01-690 4343 extension 66.

Application form, returnable by November 25th end detefled job description from Chfof Personnel Officer, Town Hall, Cetford, London SE6 4RU, or telephone 01-690 7868 (24-hour Aneefone service) qualifing expropriets reference and

EA.BK ANALYST/PROGRAMMER (Jondon WO)
Lobting for \$1-years experience in RPG to train and
supervise start and develop softens on Jew System 32.

15.280+ SANIGR ANALYST Herts
No programming recessory in this position that suind
commercial systems experience is assemble Borine
and select Subject to review.

CAR CRAIT IN BOOKING ION SOMEWHAT BOTHERS IN VERY SUPPLIED WITH A LEAST IN VERY SUPPLIED WITH A LEAST IN VERY SUPPLIED WAS AND THE CONTROL OF THE PROPERTY OF THE CONTROL OF THE CONTROL OF THE PROPERTY OF THE CONTROL OF THE CONT

#### COMPUTECH 01-794 0202

#### HERTS., BEDS. & BUCKS.

SALES SUPPORT -- TERMINAL EQUIP

Can you advise users at a world wide nel work on compress best suited to their speeds. Subsected

COMPUTER OPERATORS

SYSTEMS ANALYST to £5,504

PRODUCT SUPPORT ANALYST

VACANCY LIST

BING OKNOW HARE HAREN Arrow House, a Holywell Alli, St. Albans, Harts.

to £4,050

FEESIOE POLYTECHNIC

PROGRAMMER ANALYST

COMPUTER OPERATOR T1/2

The Computer Centre provides a service to the whole Polyschild. sed is planning to Install a large modera computer in the next year providing interrigive computing lot formines throughout the Polyschild. A wide range of programming is undertaken, including systems programming and the development of applications software for the academic objectments, the Library end the Administration.

applications software for the academic obpartments, the Library and the Administration.

Applicants for the PROGRAMMES AMALYST'S POST should normally be graduated or equivalent educational standard and professibly have two years' programming experience.

The starting eafary will be at the appropriate point on the scale 11/8 £1,500.
£4,618 (includes supplements) — minimum starting selery to go 21 — £2,326. A progressive career attructure operniss withis the scale for graduates the minimum scale will be 17 £2,963.
£3,323.

Applications for the COMPLITER

LJ.J.J.A.
Application forms and further persi-culam may be obtained from The Assissent Recreatry (Acedemic), Tesside Polysenhole, Rorough Road, Middlesbraugh, Clevelaud TRI 38A, and are returnable within 10 days.

#### THE UNIVERSITY OF AXETER **LECTURERS**

COMPUTER SCIENCE

Applications are invited for two fee lursships in the new Department of Computer Science, tensible from 1 September, 1978.
Candidetes should have special interests and qualifications in at least one of the following fields: systems enelysis and design; operating systems: computer languages and language sheery, date bets managament, automatic programming; measurement end modelling of computer-beed processing; symbolic and special espects of computing. Selary on the lecturers' scale. 23333-10655 ps. 11 is intended that one of these appointments will be made at a commancing selary within the first four points of the scale (23333-2376 p.e.). Both appointments will be select to a probationary period not exceeding three yearswith the prospects of permanency thereber.

tremeber furiter and be obteined from Miss Donesn Welson, Admis istrative Assessments, University of Esset, Norricots House, Esset DX 40J, to whom applications eight copies; oversess confidence one copy should be to werded by t Occember, 1877 Pissas quota reference number 1/36/3184.

THE OUEEN'S UNIVERSITY OF BELFAST

THE COMPUTER CENTRE

**DIRECTOR** 

The Senate of the Outsin's University of Beliest Invites applications to the Orectoship of the Computer Centre tenable frees I st Jenuery, 1978, or such other date as may be arrenged. The Centre contains an ICL 190Ss and en ICL 1904A and has 75 staff. The setery will be £9,789 par annum junder review) with contributery pension rights undar FSSU/USS. Closing date: 18th December, 1877.

Further perticulars may be obtained from the Personnel Oliker.
The Ousen's University of Belfest,
Belliset ST7 1NN, Northern Ire-land. (Please quota Rai, 77/CW.)

INIVERSITY OF NOTTINGHA

COMPUTER ASSISTANT

Applications are invited for the above post in which the reaponabilities include advising staff and students on the preparation of deta and procedurate for running standerd statistical programs and giving advice on the adaptation of programs. The successful applicant should be a compatent for the Programmer preferably the appartance of exing online terminals.

Salary on a scale rating to £2876 par

Parther particulars and letris of spelication, subrigable not later than to samble: 24, 1977, from the Steff Appointments Officer, University of NotTragham, University Particular Notingham No. 280, 1981.

### 4th Generation Mainframe Systems Engineering and Sales

Amdahl are the fastest growing high performance computer manufacturers in the world. There are now over 70 Amdahl 470 systems installed world wide with the first UK system about to be installed. This is an apportunity to get in on the ground floor in the UK company which is responsible for installation in the UK and Northern Europe and for software support throughout Europe. The new UK operation is based in West London.

#### **Mainframe Sales**

The projected British sales effort based on detailed market evaluation calls for salesmen and women with at least 5 years experience, a high degree of technical competence and a proven record of success in marketing large systems. A number of posts are available where management experience would be highly desirable. The sales team can count on the support of fully trained and highly motivated engineering and software specialists based in

#### Field Systems Engineers

The requirement is for Systems Engineers who should have extensive knowledge and experience in the use of large IBM operating systems (MVS, SVS, VS/1, VM, VMT etc.) and a flexible and innovative approach to problems and diagnostic methods. Software support includes installation, sales support and on site operating system maintenance. Field systems engineers should be able to show that they are responsive to customers needs and have enough confidence in their technical ability to deal directly with users' senior management. Opportunities exist either in the central support group or for working directly with customers.

Amdahl have created a friendly environment in which cuthuasiasm, initiative and success are well rewarded. An exceptionally generous financial package can be

Plesse apply in strict confidence with brief experience to date to:

Peter V. Williams, Managing Director, Amdahl (UK) Limited, Viking House, 29/31 Lampton Rond, Flourslow, Middlesex TW3 1JD. Tel: 01-572 4312.

#### amdahl

### HERTS AND NORTH LONDON

We specialise in D.P. recruitment for clients in Herts end North London and the following vacano ere taken from our current register:

The Management Services Occup of a highly respected ICL uses has variancies for Systems Analysis up to £6000). Sealer Programmers (up to £5600) sealer Programmers (up to £5600) sealer Programmers (up to £5600) to casis in the development of a reage of 1 P and batch applications. Herdwers will shortly include as ICL 2970, plantsing for which is used under the programmer.

Possibly the ideal installation — ant too large, not too arrest. IQM based informal, Irleadly, but vary professional. The vecesory is for a Systems Analysi c £5000 to join a department of toe engaged in the development of both batch and real-time systems. Although applicants must have commercial systems experience neither IBM nor real time knowledge is necessary.

EVI UP:

Basil department of 2 Assiyats and 3 Programmers has a voccacy for an Analyst / Programmer with POP Basic aspensics to estate Project Leader in the Invistigation, design and development of Order Entry/Invoicing systems in addition to being responsible for the supervision and guidance of the Programmers within the team (up to £4700).

VALTHAM CROSS
A loading rotest distribution group. Answer for the progressive stitude to 0' flevolopment, afture dynamic conear upportunities in all levels of Ansiya M i encody, Ansalyst /Programmers and Programmers (up to £500g Almoya' Instellation is besed upon ICL 1904 hardware provided ICL specification.

STANMORE
Centred mount on IBM 37(t/128 and 2 Ventek minis using online VOUs fook Recording, our client has a vincency for a System Analyst to make it seem of three shortly to begin development of insantial resemb VOU system control of IBM experience to be made requirement—real time using will given where necessary (up to £6790).

For more informetion on these and many other vecancies ring HAYMARKET COMPUTING LIMITED. Tel. CUFFLEY (HERTS) 4130 (UP TO 7.00 p.m.)



### **Recruitment Consultant**

We are ideally seeking someone with a successful record in contract or permenent computer recrultment. Someone who enjoys the chellsnge of selling, negotieting end servicing the business he or she generates.

However, if you leck the recruitment experience but feel your selling ebilitles combined with your pest computing experience would essure your success in this field ring us today.

The successful epplicent can expect an expect of expect career opportunity with management prospect where remuneration is paid on ability by way of beeic salery end commissioneble income.
All applications will be treated in the strength confidence. If you require any further metion and/or confidential discussion of ebove talephone us. .





Skrisugh 82333, ext. 242):

Completed forms should be returned to the Chief Finencial Officer; Council Officer.

Skrisugh North Humberside, not later their room of 25th November. -ye er einen eine werreit gaben ber ibn gebente ber en anneben fent fin eine teben fente bericht.

Application forms can be obtained from Mr. K. G. Herbeit et thio office (Telephono)

HOLDERNESS BOROUGH COUNCIL - FINANCE DEPT.

PROGRAMMER/ANALYST

Applications are invited for the above post at Secilon Heed level in the Computer Section of the Finance Department. The council has recently emberked on computer use for the first taking online seculae from Humberside County Council's Honeywell computer.

ums taking on-line service from Humberside County Council's Honeywell computer.

The successfut epplicent will have a central roff to play in developing the use of the gervice and an nbility to positively control end regulate the operational ectivities of the computer section (4) is assential. Opportunity will exist to be involved in both systems and programming work and experience in these fields is also relevant. Knowledge of COBOL is gained in a sophisticated computing environment and a working relationship with the County Council computer steff is envisaged. The salery is regionable on Grade A.P.5. 5% of total earnings subject to a meximum of £17,38 par month.

Application forms dan be obteined from Mr. K.G. Herbeit at this office (Felephone).

### We're putting on weight in all the right places.

We're putting on weight at our main production centre in London's Oxford Street and at our headquarters in Sunbury-on-Thames. We're involved in a planned programme of expansion to keep pace with the ever increasing demand for our comprehensive DP service from a growing list of clients throughout commerce. industry and the public sector.

We already operate an impressive range of hardware at both locations. Two IBM 370/158's linked as a multi-processor in London and an ICL 2970 at Sunbury, the first, incidentally, ever to go into bureau operation. But now, at Sunbury, we're adding a further IBM compatible CPU with 4 Meg of core to increase our IBM services.

All this increased activity and additional hardware means that we're also having to put on some weight on the personnel side, too. To build up our strength so that we can cope with the increasing throughput of work in London and Sunbury. We're looking for additional high calibre PROGRAMMERS and OPERATORS, who can tackle a heavy work load. Men and women who enjoy the challenge of a wide range of Interesting assignments and involvement with a variety of languages and operating systems in a high technology data processing environment. Our particular requirements are for IBM OS.

#### Support Programmers

Cost conscious, commercially orientated communicators with at least two years' experience who are able to work closely with clients in maximising program effectiveness. A good I nowledge of COBOL, Assembler, PLI or FORTRAN is required.

Systems Programmers

On line systems specialists for overall control of programs, trouble shooting, systems test and general systems work.

#### Operators

At senior and junior levels with the emphasis on IBM OS large mainframe installations, preferably with a

At both locations we offer highly competitive salaries with ample opportunities for career advancement within the company which is the largest independent computer services organisation in the country.

#### Informal Interviews

If you're looking for heavyweight responsibility, then come along and see BOC Datasolve at informal interviews being held at our offices at:

214 Oxford Street, London W1 (nearest underground, Oxford Circus) on Tuesday, 15th November

12 noon and 8 pm.

Telephone: 01-637 7141.

If you are unable to call in, then write with details of your expenence to Tina McKay, Personnel Officer, BOC Datasolve Ltd., 214 Oxford Street, London WIN 0BR.

**BOC** Datasolve

#### D.P. OPPORTUNITIES Surrey

Shift Leader c. £4500 ComputerOperator c.£3200

9 rda Eya Foods situated et Wellon-on-Themee In Surrey, require Wellon-on-Themee in Surrey, require apperanced computer personnel for our twin 2904 computer complex. This system is used not only for on time system but elso es e H.A.S.P. work station controlling e remote 19M 360/65. Suitable epplicante will also be involved in the control of 8 network of 21 remote mini computers. mini computers.
Applicants should have at least three years' operating experience, preferebly fCL 1900, and must be prepered to work

shift including weekend working. In addition to en ettractive end

competitive salery and career opportunfiles we offer modern working conditions, excellent oteff facilities and Please apply in writing giving details of

R. A. Willforns Birds Eye Foods BIRDS EYE Station Avenue

HYBRID

COMPUTER **PROGRAMMER** 

Sequired for the engineer digital hybrid computing testellation in the Department of Electrical and Electron Engineering Some digital computer programming experience is exampled to programming experience is exampled to the control of the co tms past set a best knowledge of considers and relative and relative send relative send relative set of consideration of construction of construction of construction for the set of the se

Setary: £3366-£3702 plus £312 plus 5% pay sward per ensum with possible progression to £4096 per ensum.



THE ROYAL SOCIETY
FOR THE
PROTECTION OF BIRDS

Britain's lorgest voluntary conservation organisation is, looking for a MANAOER to be responsible for operation of computer (ICL 2003/20), order procedures and office organisation in its 9sies Department.

Applicatis, male or femalo should have dynipathy with the Society's sime and be interested in joining as bethusiatic, hardworking team.

Salary withis range £2300-£390 subject to review April 1978.

For further details and application for the frees witts, an closing s.a.e. to Miss Jeolog Robertson, RSPB, The Lodge Sandy, Bedfottshire.

### INTERDATA

Due to repid expension, this internationally known mini-computer menufacturer wishes to fill the following positions in the sales department:

#### 2 Experienced **Sales Executives**

mini-computer or bureau seles experience with a knowledge of the commercial and/or industrial scientific systems markst. Ouota esminge £81/2-10K plus Company Cer.

**Sales Support Analysts** 

Enthusiesm, initistiva, knowledge of Fortran, Cobof, and Operating

**Sales Support Analysts** 

to provide in-depth technical support to our selaeman, axecuting and performing Investigations into benchmarks. Operating Systems and developing damonstration systems. These positions will interest systeme programmers/enalysts who anjoy "hands on" work end wieh to develop their existing expenies in CO9OL, FORTRAN, CORAL and Operating

One of the (Field) Sales Support Analysis will be based at our Menchester Office. whilst the others will be based at the Compeny's olfices in Slough. These positions will involve trevet within the U.K. and occasional visits to the U.S.A. The salaries for these posts will ronge from £5000 to £8800 plue a Company Cer and the usual range of bonelits

For details and application form, please telehone Tim Mariton for the Salas Executive positions E. M. Bell for the Seles Support positions

> INTERDATA LIMITED 227 Bath Road Slough SL1 4AX Telephone Slough 34511

#### ANALYST/ **PROGRAMMER** c. £5,000

A challenging opportunity to join the computer department of an internetional firm of chartered accountants.

We are seeking a young person, with a good academic back-ground, having at least 18 months, solld COBOL experience, to join an enthusiastio teem engaged upon the development of

This is an exciting opportunity to increase your DP exper as you will be writing progrems to run on a veriety of frames, including 18M 370, ICL 2900 and Burroughs 6 Future plens include the use of database techniques.

For further datails and an application form, contact: Craig Thrussell on 01-628 6088

or write to him at Whinney Murray & Co 57 Chiswell Street London EC1Y 4SY



#### **MYRIAD APPOINTMENTS** LIMITED

Computer Personnel Consultants

1000

#### BE SUCCESSFUL — JOIN MYRIAD **Senior and Junior Consultants**

Recruitment consultancy at Myriad is unlike the conventional desk bound telephone job you might imagine. It antalis visiting clients from all types of industry and meeting people from all welks of life. It provides immense eatisfection through assisting major organisations recruit computer professionals and ensuring individuals recaive a confidential service gaared to achieve their personal career progression.

Our consultants gain an interesting insight to a wide spectrum of industry and broaden their knowledge by exposurs to the latest equipment and techniques being used with all types of manufacturers' equipment.

We are interested in talking to people who feel they may be interested in recruitment consultancy with Myriad, Applicants should either be experienced in recruitment or heve a successful record in any area of data proceeding, in which case they will receive full training. They should be literate and seek success.

The Company is well established and provides excellent support to its consultants in this comparatively youthful sector of the d.p. service industry. Our consultants, success is limited solely by their own ability end they enjoy working in a professional environment without constraints.

The conditions of employment are very good end offer a secure and progressive future. An excellent commencing salery is further enhanced by a generous moothly profit sharing achane geared to

Please telephone for a confidential

discussion or write to: 30 Fleet Street London EC4Y IAA **—** 01-353 5868

#### THORNTON BAKER COMPUTER BUREAU

The bureou based in the Midlands, serves Thornton Beker & Co., e large national firm of chartered accountants. The department is growing steadily end a very ective period of computer developments has been planned for the future.

#### Assistant to the Bureau Manager

Responsible for control systems end programming development work as wall as baing the daputy for the Buragu Menager.

The successful candidate will be aged 25+ with a minimum of 5 years' systems/ rogremming work and a knowledge of ICL hardwere and softwere, Cobol and some experience of Detebase. An important quality will be the eblity to communicate effectively with all levels

Reasonable relocation expenses will be

#### **Operations** Controller

To be responsible for the operations of en

A knowledge of operating systems and communication equipment preferably together with ICL 2903 experience.

The ideal candidate will probably heve hed 3 years' experiença as e computer operator/data control clerk:

The salery will be dependent upon aga, quelifications and experience. Ref: AC 132

Applications giving brief details and quoting the above references should be

addressed to .-G. N. Jones, Thornton Baker Purionnel Services Ltd., Kennedy Tower, St. Chad's Queensway,

Birmingham B4 6EL. Interviews for the above vacencies will be held A member of the Management Consultants Association: 11

### **OPERATORS**

#### YOUR CHANCE FOR A NEW CAREER IN THE NEW YEAR

If you have been working on-shift for over 12 months now is the time when career progression, salary and the working environment is becoming important to you.

We have clients ranging from small rural sites to large butter installations who are looking for operators with experience IBM (inc. System 3), ICL, HONEYWELL or NCR mainframes

Why not telephone me to discuss the range of opportunities available in the ereas you wish to work.

> Telephone in absolute confidence: Ray Slattery

D.P. RECRUITMENT LIMITED

Kent House, 87 Regent Street, London WIR 7HF Tel: 01-437 2062/3/4 (24-HOUR ANSAPHONE)

1900 COBOL c £4000

PROCEED.

RETESTOK

FAULT LOCATED.

MODULE CHANGED.

**PROGRAMMERS** WEST COUNTRY

Phone 01-439 6481 (24 hours) EFFECTIA GNAVIS

Personnal Consultante

COMPUTER PROGRAMMER (COMMERCIAL)

SYSTEMS ANALYST

Applicate med bold a degrae or ageletical, with releasing experience in systems medyale and design, froturence at the beginnesicilies of

THE UNITERSITY OF ZAMBLE

than are louted for the lationing

व्हर्स्यक्रिये किन्नोतिस्क्रियाम**स्व** 

#### **Programmer**

in the Computer Centra of the Polytechnic. Appli-cents should have a degree or aquivalent and have a good working knowledge of one or more of the following languages — FORTRAN, ALGOL, COBOL or PLAN. The 1903T running under MAXIMOP. Salery in the range £3368 to £3702 plus £312 and Phase 2

Application forms and further details are avail-

The Administrator Oxford Polytechnic Oxford OX3 OBP

#### TECHNICAL **AUTHORS**

equirad to write Software denuals. Experience in Contract in Paris. £5 per hour

0252-41576

## Diagnostics

FAILURE DETECTED, DIAGNOSE?

CHANGE MOTIVE MODULE.

Project Ptarmigan is a mobile, flexible, digltal communications system for the British Armed Forces.

We require hardware and software personnel with an interest in diagnostica to develop and implement both diagnostic and executive software to achieve self diagnosis by the system.

Specific diagnostic experience is not essential but previous hardware and or software experience is expected.

The Ptarmigan Switch Unit is one of the high technology businesses of the Poole site, which employs in total some 2,000 people, and provides a continuing opportunity for career advancement and development.

Plessey Poole is located in a particularly pleasant part of the South Coast An attractive salary package is offered which includes immediate entry into the Company's particularly pleasant part of the South Coast Andrews Company's pension/life assurance scheme. Where appropriate generous relocation expenses will be paid.

Take advantage of this opportunity and contact George Wagets f. now by Poole (0201.3) 5161, reversing the charges, or write to him at The Blesson Company Limited, Sopers Lane, Poole, Dorset BH177ER, quoting ref. PV12



#### PRE AND POST SALES SUPPORT ANALYST **LONDON AND MIDLANDS** DISTRIBUTIVE PROCESSING

Salary circe £6,000 per annum, plus company car and excellent fringe benafit

This is an excellent opportunity to gain experience in the new and exciting distributive processing industry.

Our clients have recently leunched the first of such systems and the interest shown so far hes been exceptional

The company is a multi-national, auccessful corporation whose 'state of the art' products have always been innovative and sheed of their time

The carear opportunities for succeeeful applicante are axcaptionel end progress into a managament position will be made available in the medium term to candidates with the necessary qualifications. Candidates should have experience in at least one of the following disciplines

- 1. Sales Support of mini or meinframa computers.
- 2. Communication expertise.
- . Systems and programming energets within either hardwers or software companies

Our client will offer an above everege eatery plue a good company car and fringe banelits to those epplicants who are able to convince us of their drive, enthusiasm and innovative qualities.



insight Markeling & Personnel Consultants Ltd. 72-75 Marylebone High Street London WIM 4AJ 1818pnone: 01-400 5044

Plassa telephone the advising consultant for a confidential discussion

Ral. No. CW180

#### SALES MANAGER DESIGNATE **Engineering Services**

BASE INCOME TO £9,000 per annum — TOTAL INCOME £10,000 per annum plus

COMPANY CAR — EXCELLENT PENSION SCHEME PLUS GOOD FRINGE BENEFITS

Our clients have established themselves at the logariont of the European computer services industry and could be described as the COMPLETE SERVICES AGENCY.

Because of an increased demand for their engineering services, they have decided to leunch a separate division specialising in technical and angulaering applications. This is a ganuina and progressive career opportunity which would appeal to those people looking for their first management role or indeed eales manager looking for an increased incomo and

andidates should be able to demonstrate a successful track record in one or more of the following disciplines

- t. Experience in the sales or support of angineering packages.
- A civil or electronics engineering background,
   Salae support in engineering applications with a bureau or soltware house. 4. Engineers with a datermination to break into a sales carear.

The reputation of our clients for cereer development and employee relations is probably the best in the industry and the successful condidate can look lowered to a progressive and excessive and exce COMPENSATION PLANS

Sales Mensger Designate Base salary negotiable from £6,000 per annum: a lirat year guarentee to £9,000 per annum. A commission atructure based upon a vary realistic quote yielding circa £10,000 per annum. A company car and all expenses provided.

ACCOUNT MANAGER

asic selary circe £6,000 per annum. Firel year guerantee, porential income £9,000. A compeny car and full expenses are also oltered.

or en immediate discussion regarding these axciting positions, pleasa talephona OEAN WILLIAMS quoting Reference Number CW191.



hisight Markethry & Personnel Consultants Ltd. 72-75 Marylebone High Street London WIM 4AJ Telephone: 01-486 5644

#### data analyst

We are a large, long-established printing company internationally ismous for quelity colour printing. We also have strong publishing and reteil

We are expanding our computer operations to provide improved ninnagement information and control initially in orees of production planning, estimating and cost control. Applicants should have experience of programming end systems onelysis and be capable of working closely with production end line monagement, recognising the appropriate basic dots, rationalising and interpreting for commuter application. enuputer application.

This is a new appointment which carries an attractive salary and assistance with removal expenses.

l'Irase telephone to discuss, or write with full detuils to: Mr G, Rowe. Personnel Monoger, Jarrold Printing, Whitefriams, Norwich NR3 ISH.

#### Senior Systems Analysts/Programmers for ireland

-Opportunities in Dublin and Belfast

NCR offers excallent prospecte to exparianced Analysts/Programmer with experience of diec-based computers and a sound progremmi background, for its Systems Services Division in Iralend: You will implement naw

insigliations - NCR Century, NCR Criterion and NCR 8250/8230 systems; work on the updating of existing inetallations es customera edopt more sophiatice (ad aquipme end techniques; carry out surveys of NCR user requirements and essist in presenting systems ideas to customers For the DUBLIN vacancies the basic requirements are three seas yeller; 81, 82 and 83 operating systems experience and a working knowledge.

of NEAT 3, Leval 2. In addition, on-line systems experience would be en For BELFAST we need e

programmer/englyst with two years experience of COBOL These are definite career: thair knowledge in an active : .... anvironment. The earnings polantiat

first class, plus all the lings bandfils of a naior International organia Interested ? Then drop me e line and all me something about your

background I Tudington NCR Limited, 206/216 Marvistoria Road Condon NW1 8LY

**EDUCATION DEPARTMENT** MONKWEARMOUTH COLLEGE OF FURTHER EQUICATION

#### LECTURER—COMPUTING AND DATA PROCESSING

Grada I (£2,913-£4,869) religioned by the College a Dispersyment of Soldense and Technical

cants should possess at least Part ) Membership of the h Computer Society of equivalent qualifications. Previous hing experience an advantage:

Application forms and further pertioulars available upon receipt to samped, addressed anyalope from the Principal, Monkeweamouth College of Further Education. Swan: Sweet, Sundelland SR5 1EB. Closing date for application; 30th November, 1977:

L. A. BLOOM Chief Executive Borough of Sunderland

PROGRAMMERS

hone 01-439 6461

COMPLIFER
SERVICE
EMGINIERS
Then it free has tall
all trees
SALANCE TO LEASE.

CAPITAL APPIS.

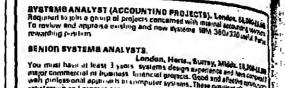
637 5551 day; 445 0468 eve. The state of the s

#### William Key

Partners Ltd., 504/8 Corn Exchange Buildings, Corporation Streat, Manchester M4 300, 061-834 2271, during office hours, 061-928 5495 at other

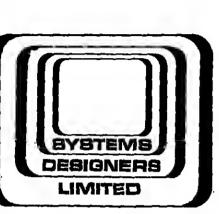
#### Application forms are a bore!

So, to get that new job you want in the North of England, just complete ours end Analyste, Programmere, Saleamen and Support Staff ere required by our clienta who include Menufecturers. Users and Softwere Houses. Seleries ere from





Ring: 01-242 1166 daylina 01-570 3509 evening to: PROMPT ACTION HUNTER APPOINTMENTS in Computer Staff
use. 33 Sicilian Avena
on Row, London WC1A 2001
total (Kingsway)



### COMPUTING SYSTEMS CONSULTANCY

#### SENIOR CONSULTANCY APPOINTMENTS SALARIES TO £9,000 PLUS BENEFITS

Systems Designers is a leading, and expanding, British systems consultancy specialising in mini and microcomputer applications.

Growing demand for our high quality service means we need top calibre consultants who will establish themsalves as leaders in their fields. In addition to their consultancy and research activities, our consultants become involved in projects from the proposal stage and deal directly with clients. A dagree of self-motivation is therefore essential, together with eagerness to extend company activities. There ara opportunities to contribute to the extensive research programme, through which the company has a good record of attracting government sponsorship for important technological developments.

Head office is in Frimlay, Surrey, and wa have a nearby cantre for the production of microprocassor systems and turnkey management. Our turnovar in profassional faas is in axcess of £1M; wa are a British private company with backing from the NEB. Excellent banafits and working conditions include profit sharing and a livaly Sports and Social Club.

We are particularly keen to meat senior consultants who are already established in thair fields, but will be pleased to discuss opportunitias with any top professional abla to contribute in our challenging anvironment.

Please writa or telephone:

#### DEFENCE

We are currently providing computing consultancy support to the Ministry of Defence at the level of overall system definition studies through to implementation for very large and small air and ground defence systems. This includes work in the areas of system intaroperability for integrated defence requirements, data link networks, distributed information processing, etc. We have challenging and creative career positions for qualified computer systems consultants who have worked in any of the above fields for more than six years.

#### INDUSTRIAL CONTROL

We have posts available for senior computer software and systems consultants who have had at least six years' experience of introducing real time and control systems into industrial plant processes. We are looking for computing. anginears who are aware of the problems of providing high availability, easily maintained systems in the harsh environments encountered in this field.

#### SOFTWARE ENGINEERING

Wa require consultants and softwara specialists who have a deep understanding and interest in Software Engineering Techniques to work on current contracts we have in this field. Professional, qualified personnel are needed. conversant with softwara management practices, computer system design methodologies, structured implementation techniquas, software verification programs and definition languagas. Our current involvement is at the forefront of this high technology field.

Alan Whealar, Systams Diractor, at Systems Housa, 57-61 High Streat, Frimlay, Surrey, GU16 5HJ. Telephone: Camberley (0276) 63471.

#### Free Lance Operators

Operators with experience of ICL 1900/George 3 urgently required for short to medium term employment in a large installation located in North Herts. Apply to Box Number 1905, Computer Weekly, Dorset House, Stemford SI, London SEI

SALES TRIP BERMUDA! SALES EXECUTIVE £10,000 + car

Recognised as one of the largest ribbes successful mini computes manufaguerars in the world Evenative user bese built, on a repetation for liver clear systems rendering support, strong manageringt, entlightened matterings and a sound timetical pass (if ye exceeds \$ 100m). Since in the requisition—ently, high rewards—antagos your celest prospects. Excellent testing U.K., and United Resign prepared you for success. Operations began, treatived this years to contact taggets, means high commission + or in 1972 20% sented a figure income and the next years to generally 800k your high provi Ref. 35 1088 DE EXECUTIVE (KINGSTON) 01-546 9473

PROGRAMMERS. SOUTH COAST COBOL OR ASSEMBLER C E4200 : Mione 01-439 6481 (24 hours) EFFECTIA GRAVIS

NORTH AFRICA C£10,000 SENIOR PROGRAMMEN Bese experience. Accommodation plus (aum large Talephone 01-989 2101 or 0280227 198 to 1

### Computer Specialists

Atkins Computing have become established as one of the leading timesharing and tomote access service companies in the U.K., with sevaral regional offices and a salas and servica centre in Holland. As part of our continued growth we need to strangthan our support function and the following Spacialists, male or female, ere

**Engineering Programmers** To join our growing team of graduete enginears who are complementing their enginaering exparience with the skills of progremming and using this to write and maintain engineering progremmes. Vacencies, for Civil Engineers with some familiarity of programming, et Epsom, and for Civil and Mechanical Engineers et our Teesside branch. Contact: Clive Stirling.

**Support Programmers** Support Progremmers with a problem-solving background to work with ourseles team. They should have previous experience of APL nithough FORTRAN could be considered. Contoct: Steve Thompson.

Support Analyst/ Programmers To join our Menagement Services Dapartmant, Applicants should have a

background of Management Information Systems and project laedar potentiel. Knowledge of APL or FORTRAN ie

ence in a finencial area. Contect: Steve Thompson

Commerciel Analyst Programmers and Programmers

To join our Business Systama Department to undertake development of On-Line



expending client bese. Applicants ahould heve at least eightean months' COBOL experience, have completed one or more projects, end be used to meeting tight schedules without constant supervision. Experience of On-Line Oete Entry, On-Line Selee Order Processing, Accounting Peckeges or Stock Control would be of oarticular interest.

#### Contect: Peul Venn.

Softwere Support We also have opportunities for graduates

with a technical programming back-ground, ideally with a working knowledga of ASSEMBLER end/or FORTRAN, end who have perhaps worked with emeil computers or in a

software house. Our Syetem Support Group provide and maintein operating System Software and give Software Support during operational houre, eo ensuring our treditionel high etandard of service. We elso ien to develoo Softwere to meet the

Company's long term plans. Contect: Roger Coley. Please contact managers specified on Epeom 40421, or write giving brief parsonel and career details to tha eddress below. We offer a pleesent working anvironment and genarous relocation expenses where

Atkins Computing Servicee Limited, Woodcote Grove, Ashley Roed, Epsom, Surrey KT18 5BW.

#### Atkins Computing

LOW COST MORTGAGE

PERSONAL LOAN PLAN

#### **Programmers**

Other companies might match us in technology. But our benefits and conditions leave them standing

it's hardly surprising that one of the largest internetional banke in the world leads the benking industry in the sophistication of its computer usage. And egein, it's hardly surprising that such an organisation pays its computer personnel competilive salaries and providee a benefits package it would be extremely difficult to metch: low-coel mortgage personel loan pien, non-contributory pension, subsidised restaurant, end interest-free season ticket loan.

We're offering at least £4500pe-end just see how you would benefit - professionelly. personelly end financially - with

The work

Our configuration, located in our EDP Oivision in Lewisham, SE London, is en IBM 370/135 opereling under DOS/VS and PDP We're looking for bright young people for these new jobs with et

least eyeer's progremming experience - idealiy more - with IBM and/or DEC, COBOL, BAL and MACRO 11 lengueges. You'll join a teem supporting existing projects end helping to develop new ones from ecretch, getting involved in each elege so that you ectually see your work through to implementation. An opportunity thel is not reedily evelleble to Programmers Ihese deys. And the proepecte

Citibenk cen offer you genuine long-term career prospects-the kind you probably can't hope to get for severel yeers in your present job. You should be capeble of taking on teem leedership quickly. We heve e history of In-house career development end todey'e new entrants could be tomorrow's menegere.

Diecover more by sending your CV to: Edwerd W. Clerk. 336 Strend, London WC2R 1HB. Telephone: 01-240 1222.

#### **CITIBAN**

#### DATA CONTROLLER

Wa require e Oato Controller to Join the Operations Group el our West End Oato Contro. The installetion comprises an IOM 370/136 operating under OS/VS1 with teleprocessing links.

the successful applicant, who will have around 2 years' esponsible for many aspects of job submission and follow-up. We offer an attractive starting salary, together with excellent because such as 4 weeks' holiday, 60p LVs per day, contribuory pension scheme and sesson-ticket loan.

for further information, and en application Brian McLintock AMOCO EUROPE INC. . 33 Cavendish Square London, W1M 3HP 3 et: 01-408 2185



#### TRAINEE COMPUTER ASSISTANT

Brate Piericel 2 22882-22841 p.s. inclusive of phase I and 2 supplement. Applications are invited for the above post of trainee Computer Assistantials to computer assistantials to computer section. with the computer section. This position will provide vistuable experience to a person in the shringge of a career in computing. The subscript yourserly opposities in 10-1801 computer, but an order has been

1801 computer, but en order this been placed for an ICL 2804 with disca, magnetic tapes and ODE's in the Automo of 1878 Candidotes should have a good educational background. A languaged of programming especially in COSOL would be an adventage.

in COBOL would be an advantage.

Applications in writing (no forms),

taking age, qualifications, experience,
and any other expensing information
together with the names and addresses
of a sterees, should be submitted to
the endantiqued not teler than 18th
flow 1877.

R. Toron, Chief Execution, Municipal
Building, Kingsony, Widnes, Chrosiste.

SMALL BUSINGSS SYSTERS DIVISION
Self-motivated people with sound COSOL and/or RPG background required at
all trees. They will complement or head up small project teams for developing

ANALYSTS AND PROGRAMMERS

SALARY C. £4,500

Highly experienced protessiones to previous protession of the CONTRACT ONVISION:

CONTRACT ONVISION:

CONTRACT ONVISION:

CONTRACTOR OF THE PROPERTY OF THE PR

Erazil.

#### THE SALES BIT

#### How familiarity breeds a barrier to the sale

the computer industry, in comparison with other longer established induetries is the way in which Chrietian namas are used so

freely.
On the briefeat acquaintence, regardless of rank, it ia normal practice for dialogue to take place on

This must to a great extent be a function of the North American Influence upon the industry which has brought with it a more caaual attituda towards personal relationships.

For people who are new to the computer business this is particularly refreshing, and it gives to all of us a ling that we are working within a friendly and democratic Industry.

However, such an environment contains many pitfells for the naive and insansitive. "Famillerity breeds contempt" ia an old saying well known to all of us, but it has a particular significance for salesmen, particularly those who listen as opposed to those who

only hear.
"Familiarity" end its
close relative "flippancy" are seldoin endearing qualities; on the contrary, they are perhaps two of the better devices for destroying empathetic nications within a nego-

valionary environment. What might oppear to the salesman to be a personal ettltude of friendliness and enthuslasm might be seen by hie client as casual and disrespectfui

Don't ever ba the first to uae Christien names. That should always be the prerog-ative of the buyer. What is clear that you have respect

A PARTICULAR feature of for him, his company end its product, simply by your manner and the words you

> a nice cheery first-time greeting to the president of an International corpo-

A man of thet stature will certainly be too smart to let you know his real reaction; but reat asaured you will heve created an instant berrier which will subsequently have to be teken down again, brick by brick.

One might expect this failing to be limited to the young and inexperfenced

It is more a function of self awareness end sensitivity, and unfortunately there are many so-called experienced salesmen and egocentric techniciens around the computer induatry, whose personel objectivity and aeles aensitivity is no more developed thon it was when they started out.

A number of years ago I was on a sales training course, and during a role playing exercise I had to make a cali on e well estab-

In order to demonstrate the good relationship I was able to generate between my client and myself, and also honefully to throw th instructor. I started the cal by saying, "Good morning, Mr Smith, I had a super time with your daughter last night." Without any sign of reaction at aif he looked me straight in the eye and said "Then you will be sad to learn that she died this

Get out of that!

£5,500) per month.

Silencers

32901, USA. Tel: (308) 724 1 t 11.

THE Commercial Acoustics of

London range of 70 silencer

Netherlands from the leading Dutch wholesaler Handelson-

demending Electro Cirkel of Rotterdam. Handelsonderneming Electro

Cirkel (CW), Polderlass 5, Rotterdam, Netherlands, Teli

Puzzle enswer

TRADER

More print capacity GREATER off-line printing capacity is offered with the DOC-TPS teps-to-print system Delivery is quoted in the US from between 30 and 45 days from the receipt of order. Twelve configurations are svallable with lease rates ranging from approximately \$2,600 to \$9,573 (£1,500 to

from Occumentation the of Melbourne, Florids. Up to four of Occumenta-tion's high speed line printers may be configured into the system to provide print speeds ranging from 1,250 to 9,000 lpm

mentation's printers ere system. The DOC-TPS operates with between one to four industry temperature to cocks and with one central con-troller.

Other features include compatibility with Burroughs, Honeywell and IBM tape equipment top of forms restart and forms and line counts for lob accounting records.

A VISUAL display terminal which is compatible with the Univer Uniscope 100 and 200 is a smaller from Fregma. Based on the proven Beehive B400, the new Uniscope Emulators are distined to offer all the Uniscope features.

The terminals can be linked in a dalay chain, thus eliminating the need for multiplexers to ricodifications to software, communications protocole or

(010 31 10) 851088.



operating procedures are needed.
Pragma Lid (CW) Middleeex MOVE the arrowed mat ches downwards as shown water Middleeex Tel. 41.962 and shift the button to the sets.